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Dunbar Library Building Use Study

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Dunbar Library Building Use Study



Submitted by the University Libraries' Assessment Team

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Submitted January 2016

ACKNOWLEDGEMENTS

This report is the result of a team effort not only of the University Libraries' Assessment Team, but of many University Libraries and Wright State University colleagues. The Assessment Team would like to acknowledge the contributions made by these partners.

We would like to thank Library Computing Services for support throughout the project. In particular, Jason Lipiec provided technical support in installing, customizing, and maintaining the SUMA software used for building occupancy counts. Frank Wolz provided access to and interpretation of different elements of LabStats and the Wi-Fi access points and use.

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Special thanks are due to the Office of Institutional Research (OIR), particularly Craig This, for guidance, advice, and logistical support in the development and distribution of the survey. We would not have been able to administer the survey at such a large scale without the support and cooperation of OIR.

The administration of the University Libraries was supportive in helping raise awareness of the project, and in dedicating a large amount of staff time to the project. The Social Media team, especially Michelle Brasseur, was key in helping market the student survey. Lisa Bleeke coordinated the distribution of incentives for participants.

Finally, the Assessment Team would also like to acknowledge the many students who took time out of their studying while at the library to have conversations with us about why they had chosen *that* particular chair, or *this* specific table, and why they were using *this* technology instead of (or in addition to) *that* type. The conversations we had with these students were critical in helping establish the foundation of our understanding about the way students view and use the library as a place. The students were informative and engaging, and their enthusiasm to participate was a constant reminder that each person we counted represented much more than a hash mark in a computer program.

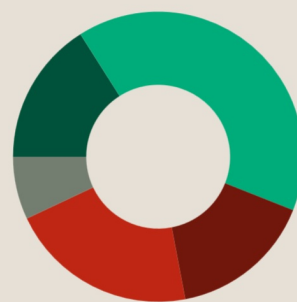
"I love our library"

Dunbar Library Building Use Study 2015

How often do students visit?



93% of Students
visit the Library



Most students stay for an hour or more each visit.

74%
when visiting
alone

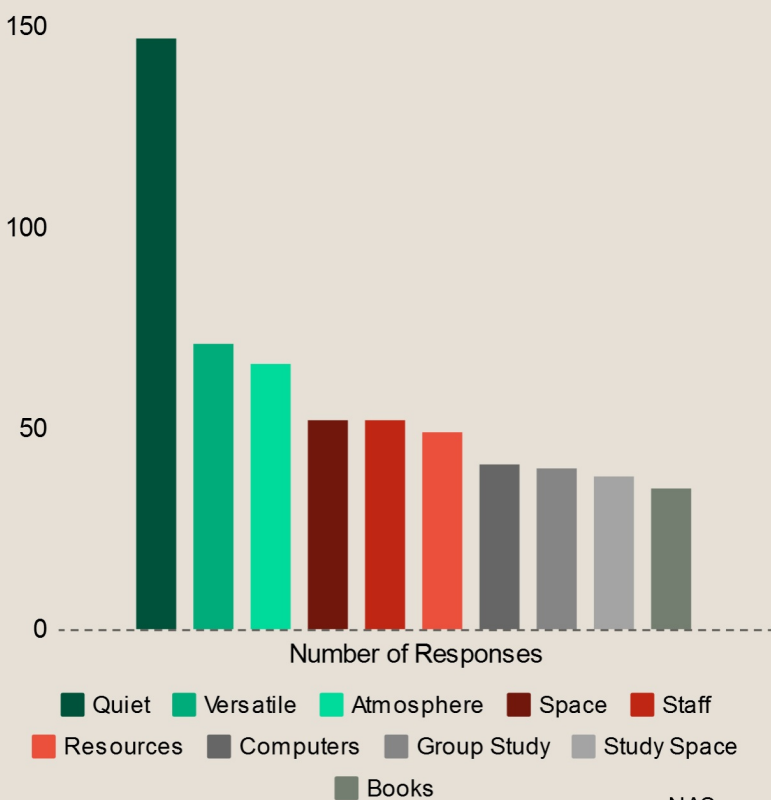
69%
when visiting
with a group

Daily (16%) Weekly (40%) Monthly (16%)
1-3 times per Semester (21%) Never (7%)

NAS

What do students like about the library?

Top Ten Responses



Student Comments

"It is a magical place! I went for the first time yesterday and I did not want to leave. Ever."

"I love that there are verses of poems painted on the wall. It sounds silly, but it is what cemented my decision to come to WSU. I went on a campus tour and saw a verse from one of my favorite poems, and it just felt right to complete an application."

"They [staff] care about me and my education. They are like family."

"You all rock and your students appreciate you more than you know!"

"I find that you can go to the library with near to any need and have it satisfied quickly and efficiently."

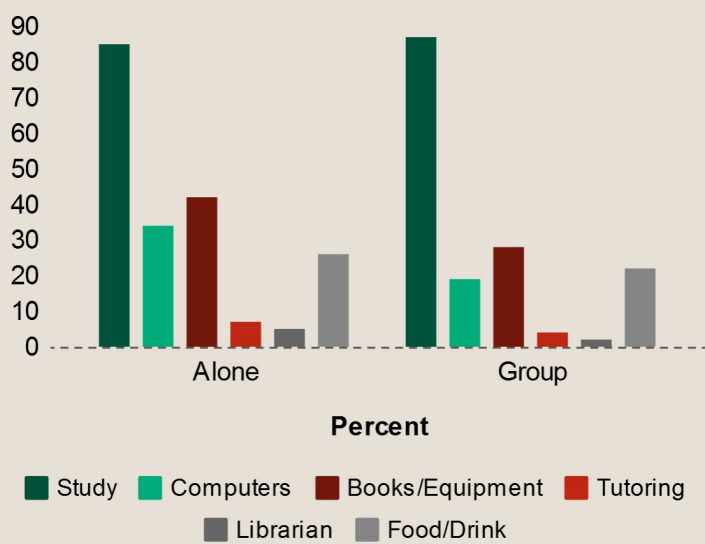
"If they don't have what you are looking for the librarians are more than capable of finding it. I never leave the library unsatisfied and am always a little smarter when I leave."

"While I don't utilize the library as much as a lot of others, I think the library staff does a phenomenal job and that the library fills a very important service to the students and university as a whole."

NAS

85% of students report visiting the library to STUDY

Why Do Students Visit the Library?



NAS

Snapshot of Library Use

746,000

2014-15
fiscal year
visits

Spring Semester 2015 Finals Week

5,000

Visits on 4/22/15

82%

Study Spaces
Full

98%

Designated
Quiet Study
Spaces Full

GT, SUMA

1,394 students completed the survey in September, 2015; 25% first-year, 12% sophomores, 13% juniors, 21% seniors, 29% graduate

Total student population at WSU is 18,059, according to the 2015-2016 Student Factbook. For a population of this size, an appropriate sample size with 95% confidence level and a margin of error of +/-3 is 1,008. With 1,394 responses, over 1,300 of which were valid, we are confident that our response rate is sufficient to draw conclusions.

Data Sources: GT = Gate Traffic, SUMA = occupancy counts, NAS = needs assessment survey, WB = whiteboard questions, Q = questionnaires, Wi-Fi = Wi-Fi use

EXECUTIVE SUMMARY

The Dunbar Library Building Use Report is a comprehensive examination of the ways the building is used and the changes that are necessary to accommodate the evolving needs of students, faculty, and staff.

AIMS OF THE REPORT

- Identify how the building is used in its current configuration
- Compare the needs of library users and what is currently available to them; identify any gaps
- Identify ways to improve the library building to better meet the needs of library users

METHODOLOGY

The study is a multimodal study with seven different data sources, both quantitative and qualitative. The study was conducted between January and October 2015. The data collected include: gate traffic; building use counts by seat, group size, and technology use; paper questionnaires; forced-choice preference voting on whiteboards; Wi-Fi access information; photographs; and a university-wide needs-assessment survey. Detailed information about each data source is available in section II.

MAJOR FINDINGS

Overwhelmingly, the findings of this study make clear that the library as a place must accommodate a variety of uses. In addition to the number of ways the library is used, and the variation in responses to questions, students often used the word “diverse” to describe characteristics they wanted in the library. Throughout the project, it was apparent that the library is many things to many people. Students demonstrated a great deal of thought and consideration in responding to questions about their preferences; it was common for responses to begin with, “It depends.” The building could be improved to address the ways it does not meet all of these needs.

- Students primarily study alone. When they do study in groups, they tend to be in groups of 2-4 people. Group work is not necessarily social or active. Groups congregate on the quiet floors of the building and work together, often on different projects, to be near friends.
- When studying alone, students prefer to study at tables. While some students use study carrels for privacy, most students prefer studying at tables because they provide the space to spread out.
- Quiet is critical to studying. Some students report coming to the library to socialize with friends, but students overwhelmingly look for a quiet place to study. Students are frustrated by the lack of quiet. Students commented that the open access to the atrium limited the ability of the 3rd and 4th “quiet” floors to be truly quiet. The lack of privacy or quiet spaces is a concern for students both for individual work and for group work. Many saw the need for designated individual and group study rooms.
- Students want to study at the library on Friday and Saturday evenings. A substantial portion of students report that the library’s current closing time of 6:00 pm on Fridays and Saturdays does not meet their needs. This is particularly a problem for students who work or have other

commitments during the daytime. Current weekend closing hours have led to a perception among some that the library is not interested in helping non-traditional students.

- The physical structure matters to students when studying. Students identified a need for more restrooms, especially on the 1st floor; cleaner facilities; more comfortable furniture; and a more aesthetically pleasing environment in the library. There was also concern that the existing layout does not meet student needs. The layout was perceived as a “hodgepodge” that made transitions between service points onerous.
- Nearly all people in the library use technology – either the library’s computers or their own laptops or tablets. Students identified a need for more computers and printers placed throughout the building. The changing nature of technology since the building was opened also poses a problem: there is a critical shortage of access to outlets in the building. Given that 80% of students report using their own laptops in the library, this is a concern not just for access but also safety. Cords are commonly stretched across aisles to reach between outlets and seats.

RECOMMENDATIONS

Based on existing use patterns and responses regarding preferences, the Assessment Team grouped the major findings into several key themes: Library Hours, Furniture, Diverse Spaces, and Technology. Each section includes recommendations with supporting rationale and data analysis. Those recommendations are outlined in brief below.

Library Hours

1. Expand library evening hours on Friday and Saturday evenings. Existing hours do not accommodate the needs of a substantial portion of the student body.
2. Maintain the existing hours of operation Sunday – Thursday.

Furniture

1. Add more seating to meet industry recommendation of seating for 10-20% FTE.
2. Add more tables/study space.
 - a. For group study areas, add a mixture of larger conference type furniture areas and soft seating areas with whiteboard availability and technology access.
 - b. For individual study areas, add a variety of tables, carrels, and soft seating with the same easy access to whiteboards and technology.
3. Replace wooden-armed chairs with black mobile study chairs.
4. Replace aging wooden four-seat carrels with a mixture of newer single or two-sided wooden carrels, open table carrels with dividers, whiteboard tables, and soft seating areas.

5. Future furniture purchases need to reflect the diverse, multifunctional/purpose expectation and desires of students.

Diverse Spaces

1. Create private study rooms, on any floor of the library, with two-hour checkout periods.
2. Designate dedicated zones for individual and group study, both quiet and active.
3. Enhance, highlight, and maintain study areas with a diverse set of furniture and atmosphere. Special attention should be given to the cleanliness and condition of the building and the maintenance of the elevators.

Technology

1. Increase the number of desktop computers in the library.
2. Provide computers and printing stations on all floors of the library.
3. Create a quiet computing area or place computers in designated quiet areas.
4. Replace computer cubicles with tables.
5. Investigate Wi-Fi quality complaints with CaTS.
6. Rewire the building to bring outlets to open study areas.

Three recommendations do not fit squarely with any of the larger themes that emerged from the study. This fact does not minimize their importance.

1. Upgrade and expand restroom facilities. The lack of a public restroom on the 1st floor of the building is problematic and creates access issues.
2. Provide additional food and beverage options. Many students commented on the need for inexpensive, non-Starbucks food choices.
3. Reconsider the general layout of the building. The current layout separates service points, which creates a sense of disconnect.

LIMITATIONS

The library is committed to providing exceptional research services and resources to facilitate faculty and student success and to fostering innovation and life-long learning in our diverse community. We recognize the need of any comprehensive building plan to consider the needs of all users: faculty, staff, and students. To the extent that the building use component of the study did not differentiate between types of users, the building use data can be assumed to be representative of all types of users: students, faculty, staff, and community. We were unable to gather faculty responses to the needs-assessment survey. We welcome the opportunity to gather additional faculty input in the future.

IMPLICATIONS AND NEXT STEPS

The library as it exists is a valuable space that meets many of students' needs. Dunbar Library is the only building dedicated to study space on Wright State University's campus. (Campus Master Plan) The building use study and needs-assessment survey suggest that in many ways, the library is meeting the needs of students. They love that it is a quiet, versatile place to study and use it as such, often to capacity. The library provides a place where students can gather to study alone or with others, to work on group projects, to use technology they don't otherwise have access to, and to socialize with friends.

However, the building shows signs of age, both in condition and infrastructure. There are ways in which the building is not keeping pace with students' study needs, notably in terms of technology, accessibility, and comfort. This report offers some solutions to address these growing pains and to ensure that the library remains an accessible, functional, welcoming place for the Wright State community.

Submitted January 2016 by the University Libraries' Assessment Team.

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I. INTRODUCTION

In January 2015, the University Libraries released a new strategic plan. As part of that plan the Wright State University Libraries' Assessment Team was tasked with a comprehensive building use study to contribute to the library's strategic goal to, **"revitalize the library building to accommodate the evolving needs of students, faculty and staff, improving the visibility and accessibility of library resources."** Specific action items within that initiative called for the Assessment Team to

- 1. Complete a building use study to analyze how and when students are using the building**
- 2. Conduct a library needs assessment**

This report is the culmination of the multimodal study that was designed to respond to this initiative.

The data within this report were collected between January and October 2015. Data collected are delineated into two categories: building use and needs assessment. Preliminary analysis of building use and basic needs assessment was done throughout the 2015 spring semester and was used to develop a campus-wide student needs-assessment survey. That survey was administered in September 2015; the remainder of the data analysis was done throughout the fall semester.

This report is organized by sections that respond to overarching themes that emerged from both phases of the study. Each section includes a data visualization that presents some of the key findings relevant to that theme, a one-page summary with recommendations, and detailed analysis to provide background and context for the key findings, summaries, and recommendations.

The report concludes with an appendix detailing the type of data collected and where it is accessible on University Libraries servers in case there is need for further analysis.

Who responded to the survey?

Dunbar Library Building Use Study 2015



1,394

students responded to
the needs-assessment
survey

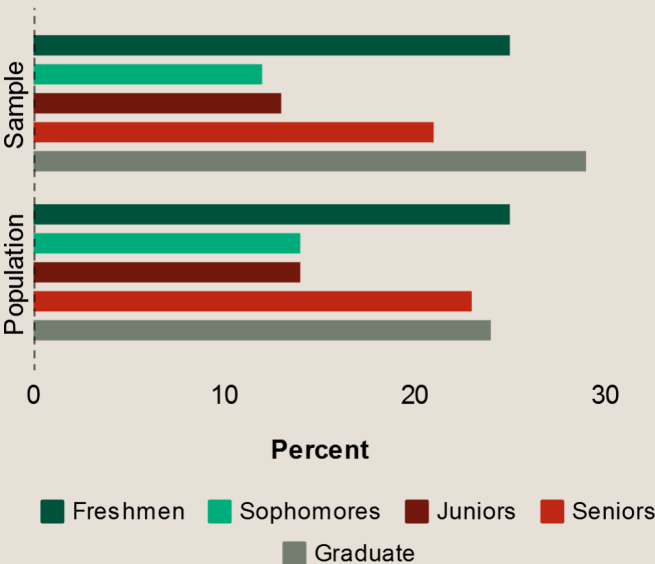
64% female

36% male



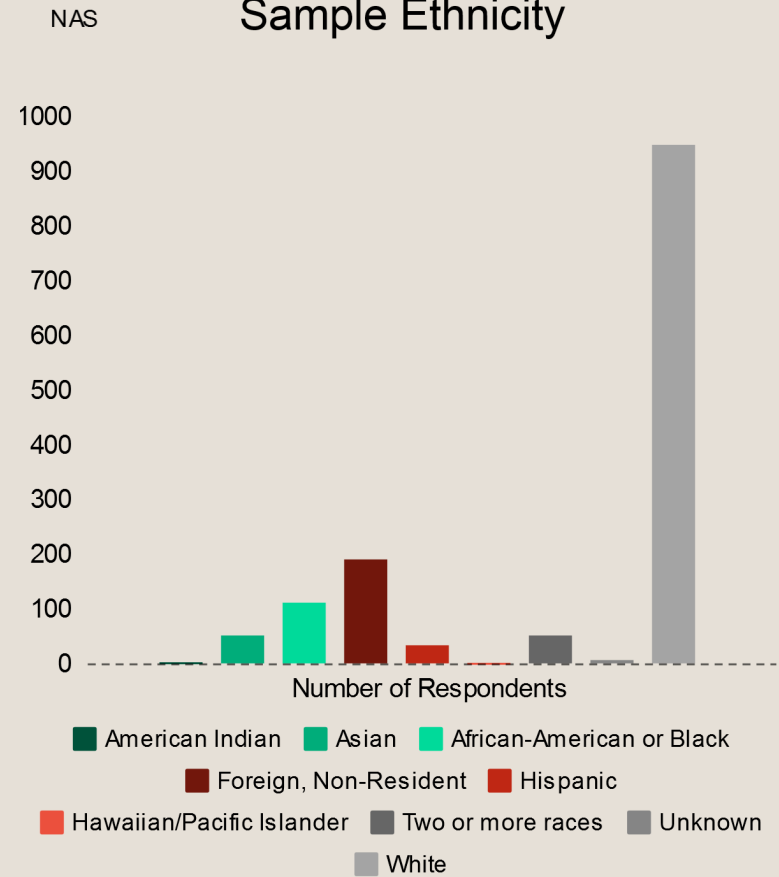
2015-16 Student Factbook states that 52% of the population are female and 48% are male

Class Status

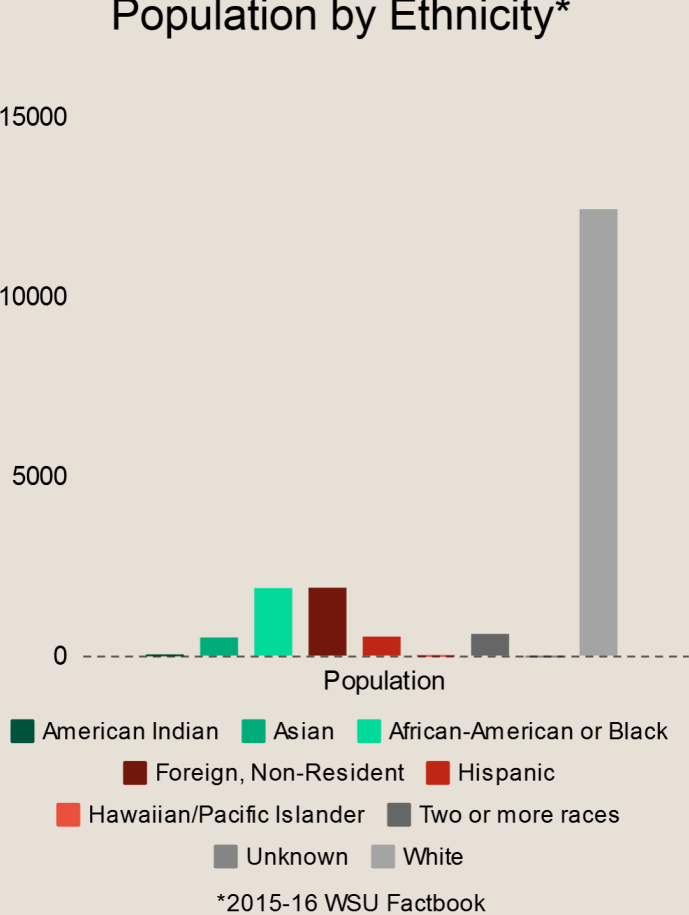


Ethnicity

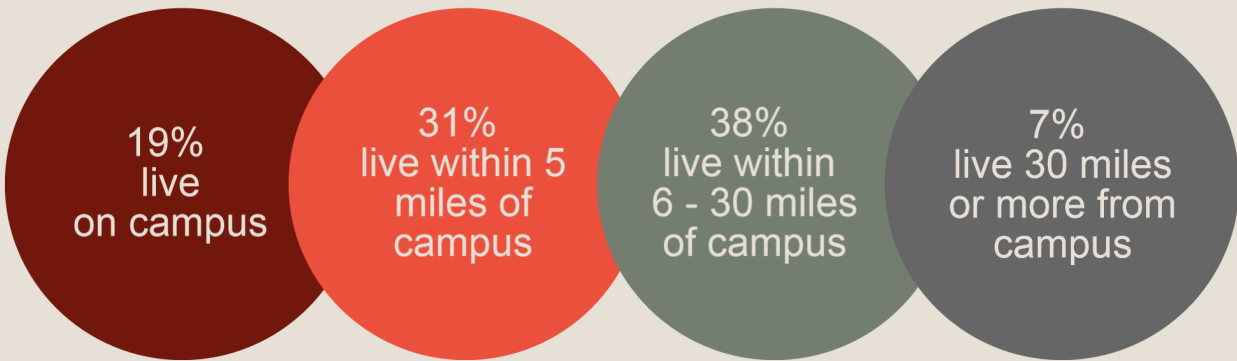
Sample Ethnicity



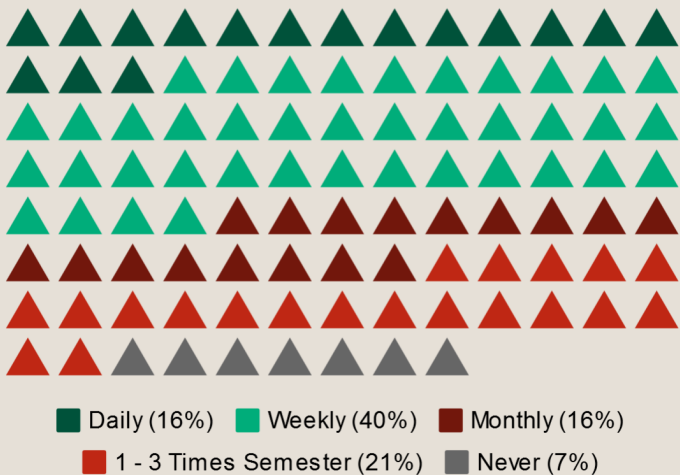
Population by Ethnicity*



Sample - distance from campus

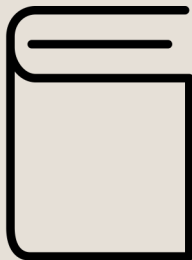


How often do survey respondents visit the library?



Full-Time Students

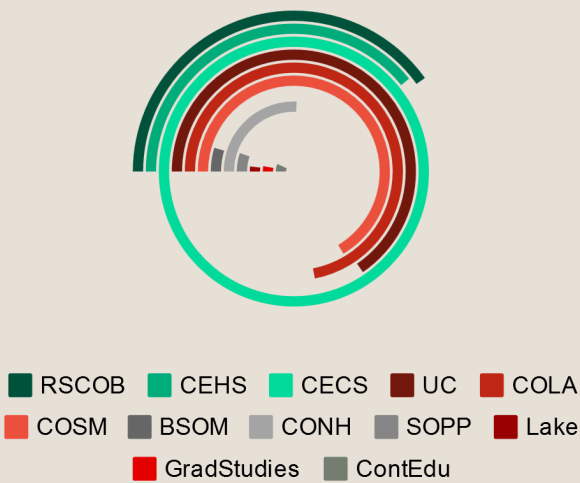
Sample = 85%
Population = 78%



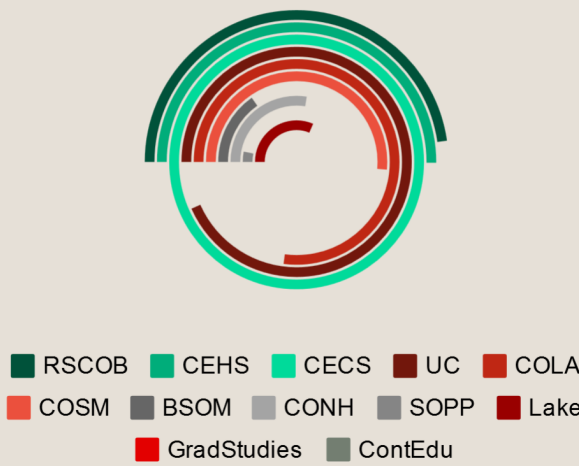
Part-Time Students

Sample = 15%
Population = 22%

Sample by College



Population by College



*Total student population at WSU is 18,059, according to the 2015-2016 Student Factbook. For a population of this size, an appropriate sample size with 95% confidence level and a margin of error of +/-3 is 1,008. With 1,394 responses, over 1,300 of which were valid, we are confident that our response rate is sufficient to draw conclusions.

II. METHODOLOGY

Conducting a study that includes information about both the current use of the building as well as a needs assessment required a variety of types of information. As such, the Assessment Team developed a multimodal study that includes seven different sources of data. The team consulted with Craig This, Interim Director of the Office of Institutional Research (OIR), particularly in the development and distribution of a large needs-assessment survey. Each data source, its collection dates and methods, and its use, is summarized below. These different sources of data are referenced throughout the report, identified by the initialization denoted below.

Survey Dates

Five of the seven data elements were collected through the Spring 2015 semester. Specifically, the team chose to consider Tuesdays and Wednesdays on weeks from mid-January through the end of April in order to get a sense of the variations in building use throughout the semester. The dates chosen were based on recommendations from OIR.

Hourly gate counts, SUMA building counts, Questionnaires, Picto-Tales, Whiteboards Wi-Fi use were conducted on:

- Tuesday, January 20, 2015
- Wednesday, January 21, 2015
- Tuesday, February 17, 2015
- Wednesday, February 18, 2015
- Tuesday, March 10, 2015
- Wednesday, March 11, 2015
- Tuesday, March 24, 2015
- Wednesday, March 25, 2015
- Tuesday, April 21, 2015
- Wednesday, April 22, 2015
- Tuesday, April 28, 2015
- Wednesday, April 29, 2015

Gate Traffic (GT)

Circulation staff gathered hourly counts of gate traffic. Gate traffic contributed to an understanding of when people most often entered and left the building. Analysis discovered heavy traffic patterns between 11:00 am and 6:00 pm with peak traffic at 1:00 pm. The counts have contributed to optimal signage placement for events and suggest staffing patterns. Because the three gates are bi-directional, gate traffic counts can only suggest building occupancy patterns, and are not conclusive of total building population.

SUMA Counts (SUMA)

The team used SUMA software to gather sample occupancy counts six times per day to understand use patterns throughout the day. SUMA counts were done at 8:00 am, 11:00 am, 2:00 pm, 5:00 pm, and 11:00 pm.

The SUMA counts identified library users within specific zones. Those zones were developed based on designated or expected use as well as other factors such as ambient noise levels. (See Appendix B for the zones designated for SUMA use).

The team produced two counts: one for individuals, and one for groups. The counts included the number of people per zone, type of furniture the students used, and what kind of technology the students were using. The zone based analysis showed that although the overall building numbers indicated a 75% average occupancy, the quiet study areas were 98% full. Each zone can be further analyzed by occupancy rates, furniture and use of technology.

Questionnaires (Q)

The team used three questions to determine overall impressions and significant issues of interest to students in the spring semester. The questions were: what would you change, what do you wish the library had more of, and what is important to you when choosing a study space. The zone-stamped questionnaires were distributed through the building on the survey dates. There were 386 completed questionnaires over the collection time frame. Because these were readily available throughout the library and at service desks, these responses do not necessarily reflect 386 unique users. Moreover, because of their distribution within the library, these collected only responses from existing library users. However, these were instrumental in introducing areas for further exploration. The 386 responses were coded by frequently occurring concepts. The team discovered a need to market current services, reconstruct services (notably Wi-Fi printing), investigate Wi-Fi access, and helped to determine questions used in the needs-assessment survey.

Picto-Tales

SUMA counting staff were asked to take photographs of anything that told a story. The photographs demonstrate both the expected and the unexpected ways students use library space. Photographs demonstrate how students move furniture to create workable large group space and private nooks. They also provide illustrations to highlight points that students often made in the questionnaires and the later survey.

Whiteboards (WB)

The team posted 12 whiteboard questions (4 per day) with photographs asking for student feedback. Photographs comparing different types of existing furniture, different spaces in the library, and different technology options were posted on whiteboards with these two questions: "Which do you prefer?" and "Tell us why." All sets of photographs with accompanying questions were asked twice in different

library zones. The whiteboards help determine clear furniture preferences, as well as areas where preferences are more fluid based on activity.

Wi-Fi Connections (Wi-Fi)

A recurring theme in the student responses to questionnaires was a complaint about Wi-Fi access. The Assessment Team got Wi-Fi data from LCS for the survey dates. Data were available for the length of the Wi-Fi session, the quality of the signal, bandwidth, device, and operating system used.

Needs-Assessment Survey (NAS)

The survey was constructed in response to preliminary findings from the other six assessment modes. The survey design included 39 multiple choice, Likert scale, and open-ended questions. The team collaborated with the Wright State University Office of Institutional Research (OIR) to vet the survey and to distribute to all students. The results were analyzed using SPSS and content analysis.

The survey was sent to all students and staff on September 2, 2015 and remained open until September 12. OIR involvement was crucial to obtaining student demographic data related to the responses. With a student body population of 18,059, a sample of at least 1,008 responses is recommended for making inferences with a 95% confidence level and a 3% confidence interval. There were 1,394 student responses, over 1,300 of which were complete and valid.

The sample was also relatively representative of the student population. Full-time students were slightly overrepresented in the sample (85% of survey respondents are full-time status, compared to 77% of all students), as were women (64% of survey respondents are women, compared to 52% of all students). To a lesser extent, there was some overrepresentation of students living in housing (19% of survey respondents, compared to 14% of all students) and graduate students (29% of survey respondents are graduate students, compared to 24% of all students). The various colleges across the university were well represented, with the exception of the College of Engineering and Computer Science (CECS); only 9% of survey respondents were enrolled in the CECS, compared with 21% of the student population.

	Student Body	Sample Respondents	Difference
N	18,059	1,394	
Full time	77%	85%	-8%
Part time	23%	15%	8%
Female	52%	64%	-12%
Male	48%	36%	12%
Freshman	25%	25%	0%
Sophomore	14%	12%	2%
Junior	14%	13%	1%
Senior	23%	21%	2%
Graduate	24%	29%	-5%
Caucasian	69%	68%	1%
African American	10%	8%	2%
Hispanic/Latino	3%	2%	1%
Asian	3%	4%	-1%
American Indian/Alaskan Native	<1%	<1%	0%
Native Hawaiian/Pacific Islander	<1%	<1%	0%
International	10%	14%	-4%
COSM	11%	15%	-4%
COLA	16%	17%	-1%
CECS	21%	9%	12%
CONH	6%	6%	0%
Univ College	19%	15%	4%
RSCOB	10%	9%	1%
BSOM	3%	1%	2%
SOPP	1%	1%	0%
Students in housing	14%	19%	-5%

The Student-Designed Library

Dunbar Library Building Use Study
2015

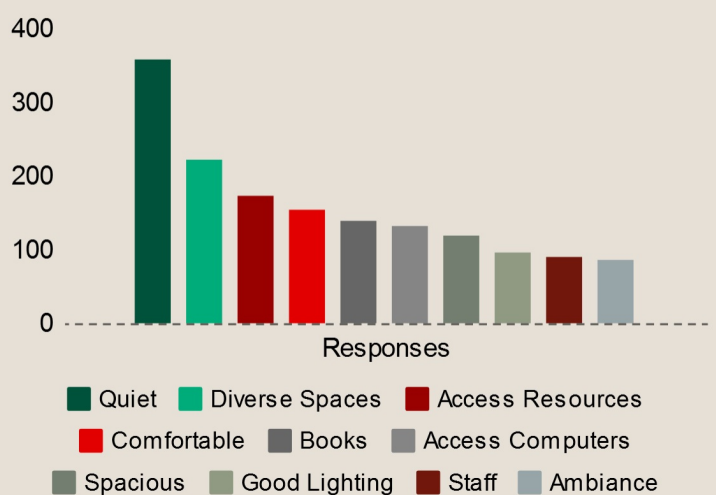
What do you think are characteristics of an ideal library building?

"An ideal library contains information that pertains to the needs of people using the library or means to find the information. The library needs to be safe, inviting, and have a studious appeal about it."



Word cloud of 1,058 written student responses

Top ten responses from students about the ideal library



NAS

"An ideal library has information that is easy to get in both digital and physical forms. It also has space to allow for study or reading to happen."

"A place that cultivates learning and knowledge in multiple ways. Plenty of space for meeting, studying and engaging in academic advancement."

"A place that is visually exciting and keeps the brain stimulated, but quiet for focused attention and studying."

We asked students:

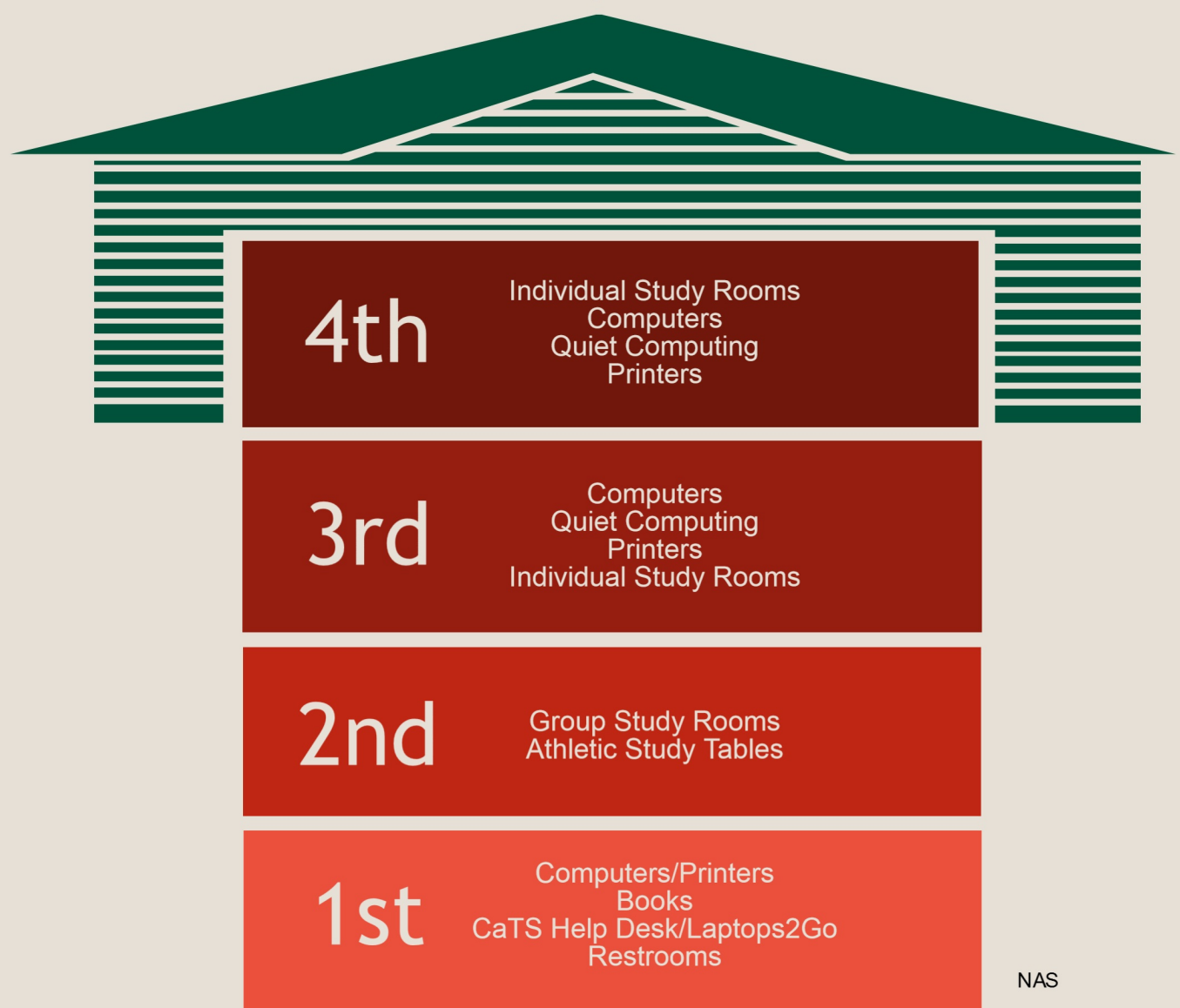
If you were to design the building, on which floor would you place our services?

	4	3	2	1	Not Needed
Borrowing and returning books	10	21	64	728	12
Course reserves (textbooks)	28	70	223	514	17
Research assistance	56	132	407	248	16
STAC (Student Technology Assistance Center)	36	95	395	253	29
Individual study rooms	360	495	249	63	31
Group study rooms	178	275	433	158	12
Quiet study	533	442	135	34	19
Group study	129	214	469	218	13
Computers	306	404	647	358	17
Quiet Computing	396	431	204	62	40
Printers	390	472	643	459	16
Books	444	557	580	354	16
Food/Drink to purchase	59	92	174	713	35
Tutoring	133	204	404	281	21
CaTS help desk/Laptops to Go	63	90	351	457	21
Athletic study tables	177	168	251	146	168
Restrooms	653	699	696	738	23

NAS

1st floor restrooms received the highest number of votes

Most students preferred library services on/near their current locations. Listed below are the services requested that are new to each floor.



NAS

1,394 students completed the survey in September, 2015; 25% first-year, 12% sophomores, 13% juniors, 21% seniors, 29% graduate

Total student population at WSU is 18,059, according to the 2015-2016 Student Factbook. For a population of this size, an appropriate sample size with 95% confidence level and a margin of error of +/-3 is 1,008. With 1,394 responses, over 1,300 of which were valid, we are confident that our response rate is sufficient to draw conclusions.

Data Sources: GT = Gate Traffic, SUMA = occupancy counts, NAS = needs assessment survey, WB = whiteboard questions, Q = questionnaires, Wi-Fi = Wi-Fi use

III. THE STUDENT-DESIGNED LIBRARY

The information in this section attempts to illustrate what students value most in an academic library. It is based on student input regarding the characteristics of an ideal library and a redesign of the current layout of services. The categories below (building, many spaces for different purposes, quiet, resources, ambiance and environment, technology, ease of use of the building, staff and furniture) were derived from comments submitted to the needs-assessment survey question “What do you think are characteristics of an ideal library building?” When provided, student quotes have been taken from the free-text comment sections of both questions.

It’s key to note that throughout the building use and needs-assessment process, students consistently identified a need for the library to be a diverse space that meets a variety of needs. It is not that the library needs to be different things to different people but, rather, different things at different times for all people.

What do you think are characteristics of an ideal library building?

“Quiet where it needs to be, kind of chatter where it doesn't. Open space, good desks, places to work. Multiple options for workspaces/study rooms. A traditional quiet study room, but also rooms where talking isn't discouraged. Good light, comfy seats, access to high-speed internet and power plugs. Decent coffee. Staff on hand to answer questions or help find material when you get stuck and start going crazy over a dumb small issue. You guys are already pretty close to on it, to be honest.”

Supporting data elements are from the results of the question “If you were to redesign the current building, where would you place the following services? [Borrowing and Returning Books, Course reserves [textbooks], Research assistance, STAC (Student Technology Assistance Center), Individual study rooms, Group study rooms, Quiet Study, Group study, Computers, Quiet computing, Printers, Books, Food/drink to purchase, Tutoring, CaTS help desk/Laptops2Go, Athletic study tables, Restrooms.] Many students appreciate the current library design however they are specific about the areas that could be improved.

“Dunbar's current layout is really a mess. More like a "hodgepodge" of areas created over the years as the various needs have grown. Glad to see that you guys (or someone) is finally (possibly) going to streamline this a bit.”

Student Values By Category

Categories are listed in order of the frequency with which they were raised.

1. Building – Physical Structure

Characteristics that students report to be of value regarding the physical structure of a library include the need for it to be spacious, clean, attractive and well maintained; to have excellent lighting, both natural and indoor; to supply sufficient electrical outlets; to provide restrooms on all floors; and to provide efficient and sufficient regulation of the temperature in the building.

Students placed restrooms on every floor of the library, notably on the 1st floor, where there are currently no public restrooms. Ten percent of the free-text “Where would you put” comments talked about the placement or hygiene of the library restrooms.

Restrooms

4	653	“The ground floor needs a public access restroom. I dislike when I'm studying alone on the 1 st floor that I have to pack my stuff up and go upstairs to go to the restroom then go back downstairs and hope my study area is still open.”
3	699	
2	696	
1	738	
Not Needed	23	

2. Many Spaces for Different Purposes

Students noted a desire for a variety of spaces within the library; essentially looking for a multipurpose environment to meet their diverse needs on any given day. Being able to study in private as well as with a group is important. Rooms are needed for both group study and individual study. Students also suggest in addition to study rooms having the library divided by zone or area for individual study and group study.

“Variety, it has to meet the needs of a very diverse group of people. That includes quiet areas, group areas and places to eat.”

Most students would designate group study on the 2nd floor of library but many of the students suggested that 3rd floor would offer good places for group study also. More students would place group study areas on the 3rd floor than on the 1st suggesting that there is a desire for quiet group study areas.

Group Study

4	178
3	275
2	433
1	158
Not Needed	12

Individual study spaces are important to students. Students described individual study spaces in their idea library. The ideal library has “lots of individual work areas,” “quiet setting with designated areas for private studying” and “designated group and individual study areas” make it clear that individual study spaces are important.

Students identified a need for study rooms on all floors of the library. There is a clear preference for individual study rooms on the 3rd and 4th floors. Most students place group study rooms on the 2nd floor but many students would design group study rooms for 3rd and 4th and 1st floors also.

Individual Study Rooms

4	360
3	495
2	249
1	63
Not Needed	31

Group Study Rooms

4	178
3	275
2	433
1	158
Not Needed	12

Students would move the athletic study tables out of 4th to the 2nd floor. A large number of students would not place this area in the library. Student comments suggest an antagonism between the athletic study tables and the need for quiet space.

Athletic Study Tables

4	177
3	168
2	251
1	146
Not Needed	168

“When the athletic study tables are being used by the athletes, it is NEVER quiet, even though it is a quiet study floor. It’s super annoying.” (emphasis in original comment from student)

3. Quiet

The concept of “quiet” in a library is very highly valued. More than a third of students (358 out of 1058) specifically identified quiet as important in their descriptions of an “ideal” library. Levels of quiet are desired from completely silent to normal conversations. Students want areas of the library clearly delineated by noise level.

Students suggest the 4th floor as the most desirable place to put quiet study followed by 3rd. The design suggestion may reflect a “quieter as you go up” idea as described in student comments.

Quiet Study

4	533
3	442
2	135
1	34
Not Needed	19

“I enjoy the setup of the library now and appreciate that the floors tend to get quieter as they progress.”

Students expressed a design preference for quiet computing space on the 3rd and 4th floors.

Quiet Computing

4	396
3	431
2	204
1	62
Not Needed	40

4. Resources

The continued availability of books and course reserves was specifically mentioned. A few students noted that the addition of more textbooks would be welcomed. Printed books are still considered as an essential piece of an “ideal” library. Additional comments included other resources like DVDs and the popular reading collection. Providing access to electronic resources including journals, eBooks, and databases is highly valued.

When asked the best place for books students suggested all floors, including 1st in almost equal numbers. Students placed course reserve textbooks on the 1st floor most often. The 2nd floor was often suggested as well.

Books		Course Reserves (Textbooks)	
4	444	4	28
3	557	3	70
2	580	2	223
1	354	1	514
Not Needed	16	Not Needed	17

5. Ambience and Environment

Students were also clear that an ideal library should be warm and inviting, provide a sense of safety and security, and above all, be comfortable. It must feel intellectually stimulating. Students want to feel welcome in an atmosphere that is conducive to studying, whether it be individually or in groups.

“A space that feels like a great big living room, with comfy chairs and cozy nooks for reading, thinking, or even napping between classes.”

“Well, to be able to have the quietness that you need to be able to buckle down and study what you need to study with no distractions.”

“A place that is visually exciting and keeps the brain stimulated, but quiet for focused attention and studying.”

“Stimulates thought and facilitates further research”

6. Technology

In the broad scope of technology, students value the availability of public computers and reliable broadband Wi-Fi for their own devices. They see the library as a place where advanced technologies are available and students are able to learn about them and experiment as well.

“A library should also have resources for different majors, like large printers for posters or drawing areas for engineers.”

“Inviting, quiet, technologically advanced, comfortable, multiple types of study areas, and librarians and other staff up to date on current technology used in the classroom.”

“Technology-oriented -- like introducing tablets.”

“Plenty of computers and printers.”

Students desire computers and printers on all floors of the library although the 2nd floor was suggested more than any other.

Computers		Printers		“I think every level should have a computers/printers section.”
4	306	4	390	
3	404	3	472	
2	647	2	643	
1	358	1	459	
Not Needed	17	Not Needed	16	“I know it is unrealistic to have computers and printers on every floor but it would be convenient.”

See section VII for technology recommendations.

7. Ease of Use of the Building

This wide-ranging category includes the ability to navigate in, around, and to the building. Students want to be able to use the library without having to ask for help. Signage is extremely important. The location of the library on campus was mentioned, as was accessibility for all students. Availability of parking was also raised by several students.

“I would also install wall screens at key locations, displaying maps of the library's contents, labeled both by index numbers and by general topic areas.”

“Accessible location and hours, signs that clearly show what resources are available and how to access them.”

8. Staff – Help

Students value helpful, knowledgeable, approachable staff. Ideally, students would locate library service desks on every floor with staff available to provide assistance with library resources and technology.

“It's not the building! It's the people you have working in the library that make the real difference in an effective outcome.”

“Staff on hand to answer questions or help find material when you get stuck and start going crazy over a dumb small issue.”

Students had clear preference for the 1st floor as the best location for borrowing and returning books.

Borrowing And Returning Books

4	10
3	21
2	64
1	728
Not Needed	12

Most students place research assistance on the 2nd floor although a substantial number also suggest that research assistance should be placed on the 1st floor. Most of the students place STAC on the 2nd floor but many suggest the 1st floor instead. Students overwhelmingly suggest 2nd floor as the best place for tutoring but some students also suggest tutoring areas on the 1st and 3rd floors.

Research Assistance

4	56
3	132
2	407
1	248
Not Needed	16

STAC

4	36
3	95
2	395
1	253
Not Needed	29

Tutoring

4	133
3	204
2	404
1	281
Not Needed	21

Students suggested first the 1st floor and then the 2nd floor as the ideal locations for Laptops2Go, which they viewed more as a technology resource rather than a library service point.

CaTS Help / Laptops2Go

4	63
3	90
2	351
1	457
Not Needed	21

9. Furniture

Having the option to study alone or in groups is important so students report a need for tables of all sizes, including tables with dividers and with whiteboards. Moveable is an important characteristic as is the degree of comfort for sitting long periods of time. Students want furniture they can lounge on and also that will make them sit up and study. The phrase “comfortable furniture” was mentioned frequently.

“Individual study tables along with group study tables, big open tables, comfy chairs or sofas.”

“Comfy furniture spread out so there are various sizes and types of furniture clusters.”

See section V for furniture recommendations.

10. Food and Drink

Suggestions for food and drink range from vending machines on every floor, to a regular dining hall with healthy inexpensive food. Availability of food and drink is important all of the hours the library is open.

Most students placed Food/drink on the 1st floor when selecting a location.

Food/Drink	
4	59
3	92
2	174
1	713
Not Needed	35

Summary

Students identified many areas in which the library already provides what they deem ideal: a space that meets a variety of needs for solitary and group study, technology, and helpful staff. However, there are many areas in which students identified room for growth. Notably, they identified a need for more comfortable furniture; an updated and cleaner ambience; access to technology in more places throughout the building; and better design for quiet study.

A student response in the needs-assessment survey sums up the student comments about an “ideal” library very well:

“Key components for me are helpful librarians/assistants, online access to databases/resources, working computers and printers, a vast DVD collection and books on every possible topic. A quiet space and more social place are essential. It’s also important that it is aesthetically pleasing inside and outside, as well as massive (to hold all the books!). It is warm and inviting with bright, fun colors that enhance the modern design. Architecturally it is important that it has a ton of natural light and is as environmentally friendly as possible, perhaps powered by natural resources like the sun. It would be nice to have live flowers, plants or built in flower beds so that there is an element of natural life within the library; it’s essential when you spend hours on hours in the library to have some faint reminder of the outside world. Coffee and tea are nice additions for those long hours as well. I know it is not incredibly sanitary, but a reading nook with pillows would be nice. If there was a library with all these components, it would definitely be my ideal library.”

Library Hours

Dunbar Library Building Use Study
2015



The library is open 98 hours per week during the semester.

Current Hours:

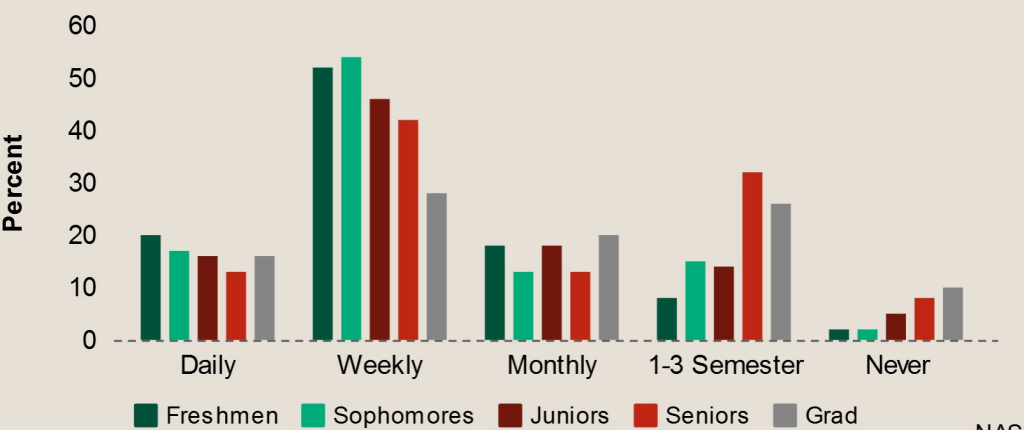
Monday-Thursday 7:30am - 12:00am

Friday - 7:30am - 6:00pm

Saturday 10:00am - 6:00pm

Sunday 10:00am - 12:00am

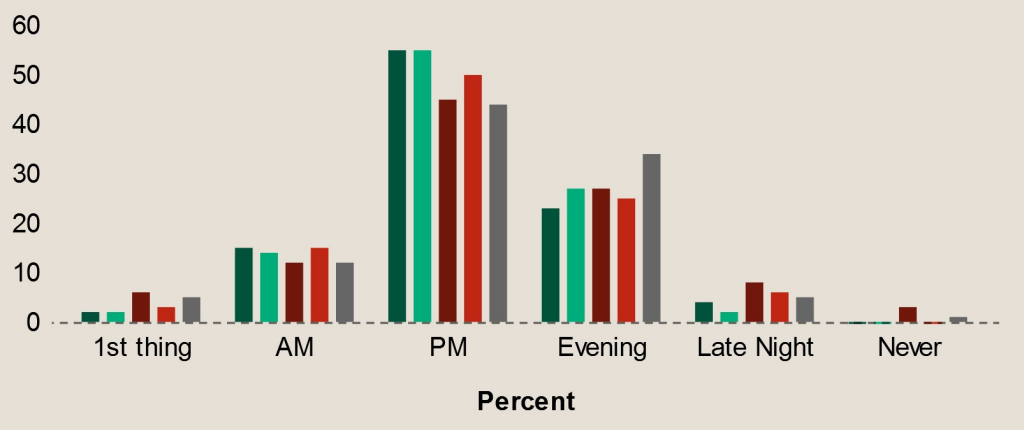
How often do students visit?



93% of students visit the library

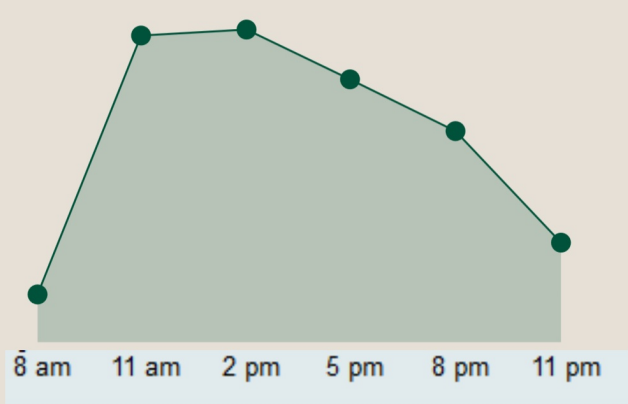
Most students visit weekly

When do they visit? Weekdays



11 am to 5 pm are the busiest weekday hours

Average weekday traffic flow



Weekday average and cumulative hourly gate traffic

8a	116	1394
9a	325	3901
10a	450	5399
11a	656	7877
12n	697	8362
1p	971	11650
2p	757	9081
3p	784	9403
4p	777	9329
5p	807	9687
6p	580	6964
7p	483	5800
8p	332	3978
9p	323	3871
10p	278	3335
11p	164	1964
12m	151	1813

Weekend Visits

61% of students visit the library on the weekend.

Peak hours are in the afternoon.

Do library hours meet student needs?

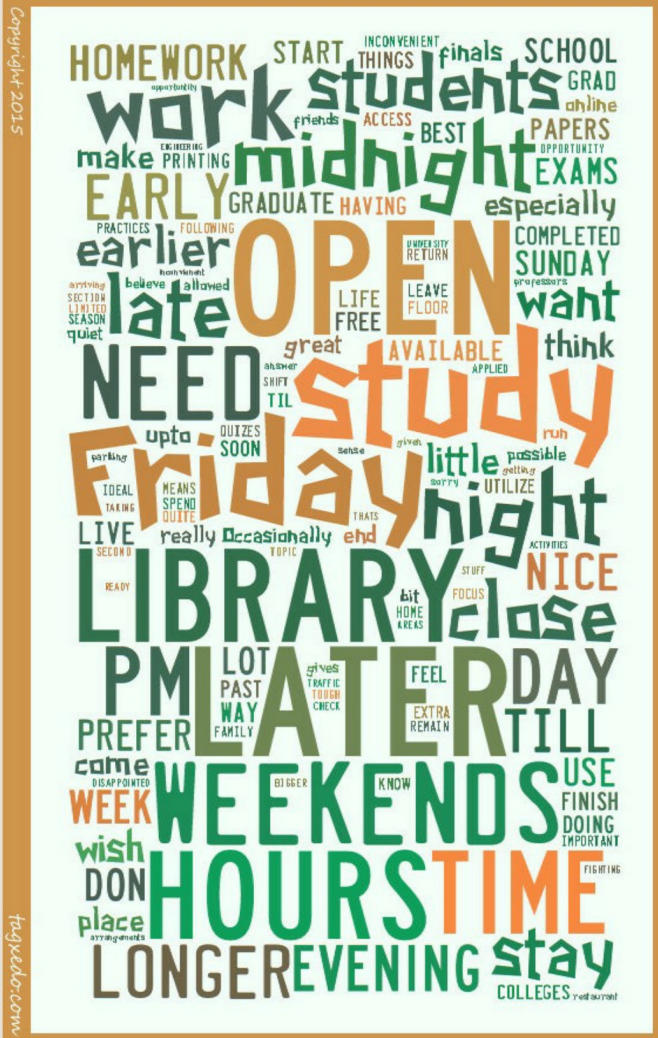
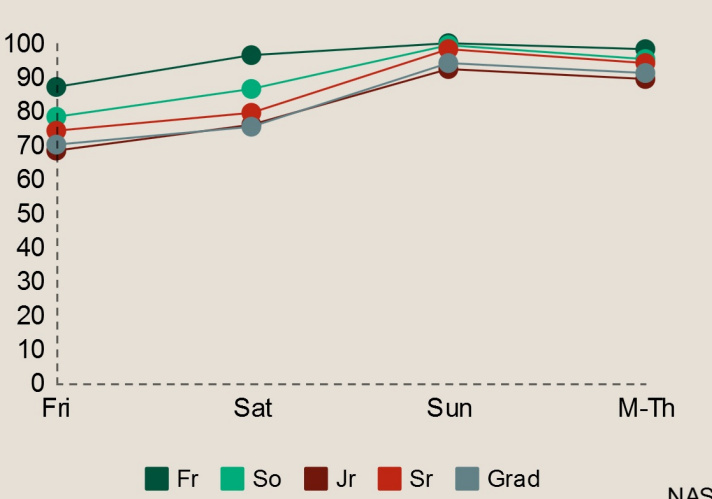
95% satisfaction with Sunday and weekday hours

25% dissatisfaction with Friday hours

17% dissatisfaction with Saturday hours

Juniors, Seniors, and Graduate Students had higher dissatisfaction rates with library hours

Library Hours - Satisfaction Rates



word cloud of student comments

1,394 students completed the survey in September, 2015; 25% first-year, 12% sophomores, 13% juniors, 21% seniors, 29% graduate

*Total student population at WSU is 18,059, according to the 2015-2016 Student Factbook. For a population of this size, an appropriate sample size with 95% confidence level and a margin of error of +/-3 is 1,008. With 1,394 responses, over 1,300 of which were valid, we are confident that our response rate is sufficient to draw conclusions.

Data Sources: GT = Gate Traffic, SUMA = occupancy counts, NAS = needs assessment survey, WB = whiteboard questions, Q = questionnaires, Wi-Fi = Wi-Fi use

IV. LIBRARY HOURS

Summary

This section considers patterns in building occupancy as well as student satisfaction with existing hours. Information about library hours was obtained using the gate counts, SUMA counts, and needs-assessment survey.

Recommendations

1. Expand library evening hours on Friday and Saturday evenings. Existing hours do not accommodate the needs of a substantial portion of the student body.
2. Maintain the existing hours of operation Sunday – Thursday.

Rationale

Nearly a quarter of students indicated that the existing Friday hours do not meet their needs and nearly 20% of students report the same for Saturdays. This is particularly a problem for juniors, seniors, and graduate students. The expressed need for longer Friday and Saturday hours is fairly constant regardless of whether students are full-time or part-time and regardless of whether they live on campus, near campus, or farther away.

Students reported satisfaction with hours of operation on Sundays through Thursdays, with 96% of students' needs met by Sunday hours and 94% of students' needs met by Monday-Thursday hours.

Additional Information

While the need for expanded hours is fairly evenly distributed among students, comments from students on the survey suggest a larger impact of earlier closing on Fridays and Saturdays on non-traditional students who work.

Current Use Patterns

The peak of traffic in the library is in early afternoon, with higher user traffic from 11:00 am – 5:00 pm. Building occupancy counts suggest fairly steady occupancy from 11:00 am through 5:00 pm. Approximately 8% of weekday building occupancy is in the late evening hours.

Student Comments

"I study at McDonald's on Friday night because the library closes so early."

"More hours are needed, especially on the weekends. I am sorry but I do not have a life. Also, almost all the professors give more homework and exams and quizzes on weekends. No place is better to us than the library."

"There have been multiple times where I have needed to access a course reserve text book on Friday after six and not been able to."

"I would like to be able to stay later on Saturdays because I don't have to work on Sundays. The library seems aimed at traditional students without thought for people who have returned to school after a break of several years."

Recommendation 1: Expand library evening hours on Friday and Saturday evenings. Existing hours do not accommodate the needs of a substantial portion of the student body.

FRIDAY HOURS

Current hours: 7:30 am – 6:00 pm

Nearly a quarter of students report that current operating hours on Fridays do not meet their needs. This problem is particularly pervasive for those are juniors, seniors, or graduate students. Additional evening hours should be made available to students.

		fridayhours			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	989	70.9	76.1	76.1
	2	310	22.2	23.9	100.0
	Total	1299	93.2	100.0	
Missing	System	95	6.8		
Total		1394	100.0		

Code: 1 = Yes, the current library hours meet my needs

2 = No, the current library hours do not meet my needs

Satisfaction with Friday hours is not evenly distributed among all students. Students further along in their studies report more dissatisfaction with Friday hours. Nearly a third of juniors and graduate students reported that existing Friday hours do not meet their needs, with nearly 25% of seniors reporting the same.

class * fridayhours Crosstabulation

Count		fridayhours		Total
		1	2	
class	1	293	43	336
	2	121	31	152
	3	118	55	173
	4	202	70	272
	5	254	111	365
Total		988	310	1298

Class: 1= freshman; 2=sophomore; 3=junior; 4=senior; 5=graduate

Friday hours: 1=yes, the current library hours meet my needs; 2= no, the current library hours do not meet my needs

- 13% of freshman report that Friday hours do not meet their needs
- 20% of sophomores report that Friday hours do not meet their needs
- 32% of juniors report that Friday hours do not meet their needs
- 26% of seniors report that Friday hours do not meet their needs
- 30% of graduate students report that Friday hours do not meet their needs

Of the 297 students who provided comments about their dissatisfaction with Friday hours, an overwhelming majority (270 students, or 91%) expressed a need for later Friday hours. Many students commented that they are unable to use the library on Fridays because of a conflict with work (8%) or Friday afternoon classes (4%).

Distance From Library

Examining student preference by distance from campus suggests that current Friday hours do not meet the need for a substantial number of students, regardless of where they live.

- 22% students who live on campus reported Friday hours don't meet needs
- 29% of students who live within five miles of campus reported Friday hours don't meet needs
- 21% of students who live 6-30 miles from campus reported Friday hours don't meet needs
- 25% of students who live more than 30 miles from campus reported Friday hours don't meet needs

howclose * fridayhours Crosstabulation

Count

	fridayhours			Total
		1	2	
howclose	63	1	0	64
1	3	207	57	267
2	17	298	121	436
3	11	414	109	534
4	1	69	23	93
Total	95	989	310	1394

1=On campus; 2=Within 5 miles of campus; 3=6-30 miles from campus; 4=More than 30 miles from campus

Student comments reinforce the idea that later Friday hours are important for all students, regardless of where they live in relation to campus:

- "It should be open later for those students who live on campus and wish to spend their evening in the library studying."
- "Living near campus, the library is a good place for me to stay and study before the weekend. Staying open until 9:00 or 10:00 pm would be beneficial to me."

- “Living way off campus and taking mostly online courses while working full time means the weekends are the best time to go to the library, but usually I cannot make it until evening or later.”

Many students suggest that Friday nights are ideal because they do not have work or classes that evening or the next day, but that the number of homework assignments and projects that are assigned over the weekend is high.

- “More hours is needed, especially on the weekends. I am sorry but I do not have life. Also, almost all the professors give more homework and exams and quizzes on weekends. No place is better to us than the library.”
- “It's frustrating not being able to use the library later in the evening/night on weekends because it's generally a less crowded study night, but students can't take advantage of it.”

By Library Use

The number of students who report that Friday hours are inadequate suggest that this a problem regardless of how often students currently come to the library. However, it is particularly a problem for frequent users of the library, with 40% of daily visitors, 29% of weekly visitors, and 34% of monthly visitors reporting that Friday hours are inadequate for their needs. Student responses also suggest that the current Friday hours may provide a barrier to some students coming to the library. Among students who visit less frequently, 25% of those who visit the library 1-3 times a semester and 27% of those who never visit the library report that Friday hours are inadequate for their needs.

howoften * fridayhours Crosstabulation

Count

	Fridayhours			Total
		1	2	
howoften				
	64	424	60	548
1	5	79	52	136
2	8	235	98	341
3	7	87	44	138
4	10	123	41	174
5	1	41	15	57
Total	95	989	310	1394

1=Daily 2=Weekly 3=Monthly 4=1 - 3 Times a Semester 5=Never

*NOTE: Percentages were determined based on the valid n of 1299; non-responses were excluded

SATURDAY HOURS

Current hours: 10:00 am – 6:00 pm

83% of students report that existing Saturday hours meet their needs, while 17% of students report that the existing hours do not meet their needs

saturdayhours					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	1076	77.2	82.8	82.8
	2	223	16.0	17.2	100.0
	Total	1299	93.2	100.0	
Missing	System	95	6.8		
Total		1394	100.0		

Code: 1 = Yes, the current library hours meet my needs

2 = No, the current library hours do not meet my needs

As with Friday hours, of the students for whom Saturday hours didn't meet their needs, an overwhelming majority (80%) asked for later hours, while many (18%) requested earlier hours. Many students (13%) commented that the weekends are the best time to study, with 8% commenting that later evenings on the weekend are the only way to avoid conflicts with work.

"I typically can only study on campus on Friday through Sunday in the evening until the middle of the night."

"Last Saturday, I was not ready to leave at 6pm. Maybe part of it could close and part of it could remain open for those students who need to continue working?"

"Weekends are the only days I have to start early. I would prefer open time of 8am 6pm more than once I have arrived around a little before 9am forgetting the open time and other students are also waiting for the library to open."

class * saturdayhours Crosstabulation

Count

		saturdayhours		Total
		1	2	
Class	1	321	15	336
	2	132	20	152
	3	132	41	173
	4	215	56	271
	5	275	91	366
Total		1075	223	1298

4% of freshman report that Saturday hours do not meet their needs

13% of sophomores report that Saturday hours do not meet their needs

24% of juniors report that Saturday hours do not meet their needs

21% of seniors report that Saturday hours do not meet their needs

25% of graduate students report that Saturday hours do not meet their needs

Distance From Library

Examining student preference by distance from campus suggests that the satisfaction with Saturday hours is not evenly distributed across students but, rather, is a bigger problem for students who live off-campus.

- 9% students who live on campus reported Saturday hours don't meet needs
- 24% of students who live within five miles of campus reported Friday hours don't meet needs
- 16% of students who live 6-30 miles from campus reported Friday hours don't meet needs
- 21% of students who live more than 30 miles from campus reported Friday hours don't meet needs

howclose * saturdayhours Crosstabulation

Count

	saturdayhours		Total
	1	2	
howclose	1	0	1
1	241	23	264
2	320	100	420
3	441	81	522
4	73	19	92
Total	1076	223	1299

How close: 1=On campus;
2=Within 5 miles of campus; 3=6-30
miles from campus; 4=More than
30 miles from campus

Saturday hours: 1= current hours
meet needs; 2 current hours do not
meet needs

By Library Use

The number of students who report that Saturday hours are inadequate suggest that this a problem regardless of how often students currently come to the library. Twenty-nine percent of daily visitors,

21% of weekly visitors, and 29% of monthly visitors reporting that Friday hours are inadequate for their needs. Among students who visit less frequently, 23% of those who visit the library 1-3 times a semester and 21% of those who never visit the library report that Saturday hours are inadequate for their needs.

howoften * saturdayhours Crosstabulation

Count

		saturdayhours		Total
		1	2	
howoften	1	94	38	132
	2	265	67	332
	3	93	38	131
	4	126	38	164
	5	44	12	56
Total		622	193	815

How often: 1=Daily 2=Weekly
3=Monthly 4=1 - 3 Times a
Semester 5=Never

Saturday hours: 1= current hours
meet needs; 2 current hours do not
meet needs

Some students suggested that their distance from campus played a role in when they were able to come to the library.

“Living way off campus and taking mostly online courses while working full time means the weekends are the best time to go to the library, but usually I cannot make it until evening or later.”

Part-Time/Full-Time Status

It is worth noting that there is a modest difference between full-time students' (84%) and part-time students' (79%) satisfaction with Saturday hours. Several comments from students suggest a perception that the current library hours do not take into consideration the unique needs of non-traditional students. For example,

“I would like to be able to stay later on Saturdays because I don't have to work on Sundays. I work M - F full-time and take classes. I'm tired during the week. Again, the library seems aimed at traditional students without thought for people who have returned to school after a break of several years.”

Another commented that the current Saturday hours “limits access for grad and nontraditional students who are working full-time.”

Recommendation 2: Maintain the existing hours of operation Sunday – Thursday.**WEEKDAY HOURS**

Current hours: Monday – Thursday, 7:30 am – 12:00 am

94% of students report satisfaction with the library's weekday (Monday – Thursday) hours; 6% report that the current hours do not meet their needs. While there are students whose needs are not being met due to a variety of circumstances (evening classes, work hours, family situations, etc.) only 6% of all students report that current library hours Monday – Thursday do not meet their needs. No change is needed.

		Frequency	Valid Percent	Cumulative Percent
Valid	1	1216	93.6	93.6
	2	83	6.4	100.0
	Total	1299	100.0	
Missing	System	95		
Total		1394		

Code: 1 = Yes, the current library hours meet my needs

2 = No, the current library hours do not meet my needs

class * weekdayhours Crosstabulation

		weekdayhours		Total
		1	2	
class	1	328	7	335
	2	144	8	152
	3	154	19	173
	4	255	17	272
	5	334	32	366
Total		1215	83	1298

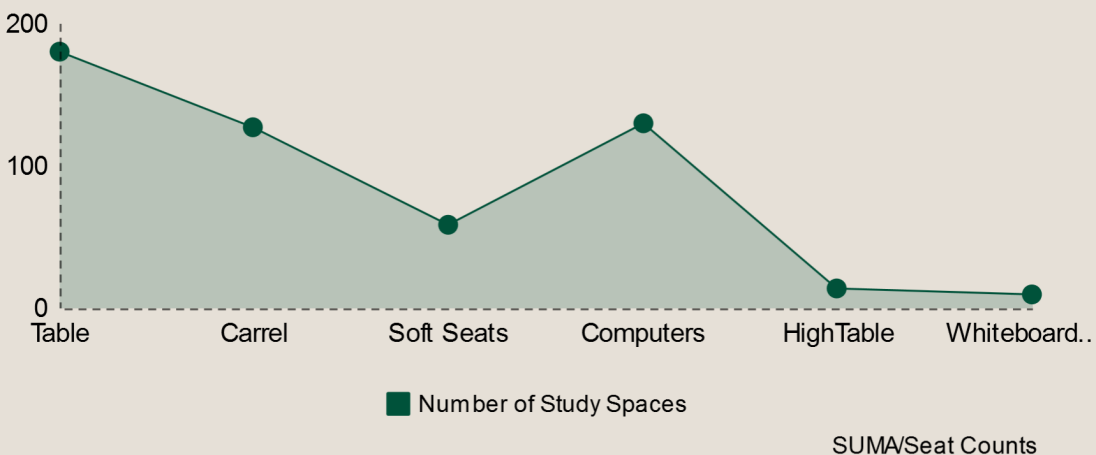
Satisfaction with hours is not evenly distributed; freshman and sophomores report the highest levels of satisfaction, while juniors report the greatest levels of dissatisfaction.

- 98% freshman satisfied
- 95% sophomores satisfied
- 90% juniors satisfied
- 94% of seniors satisfied
- 92% of graduate students satisfied

Furniture

Dunbar Library Building Use Study 2015

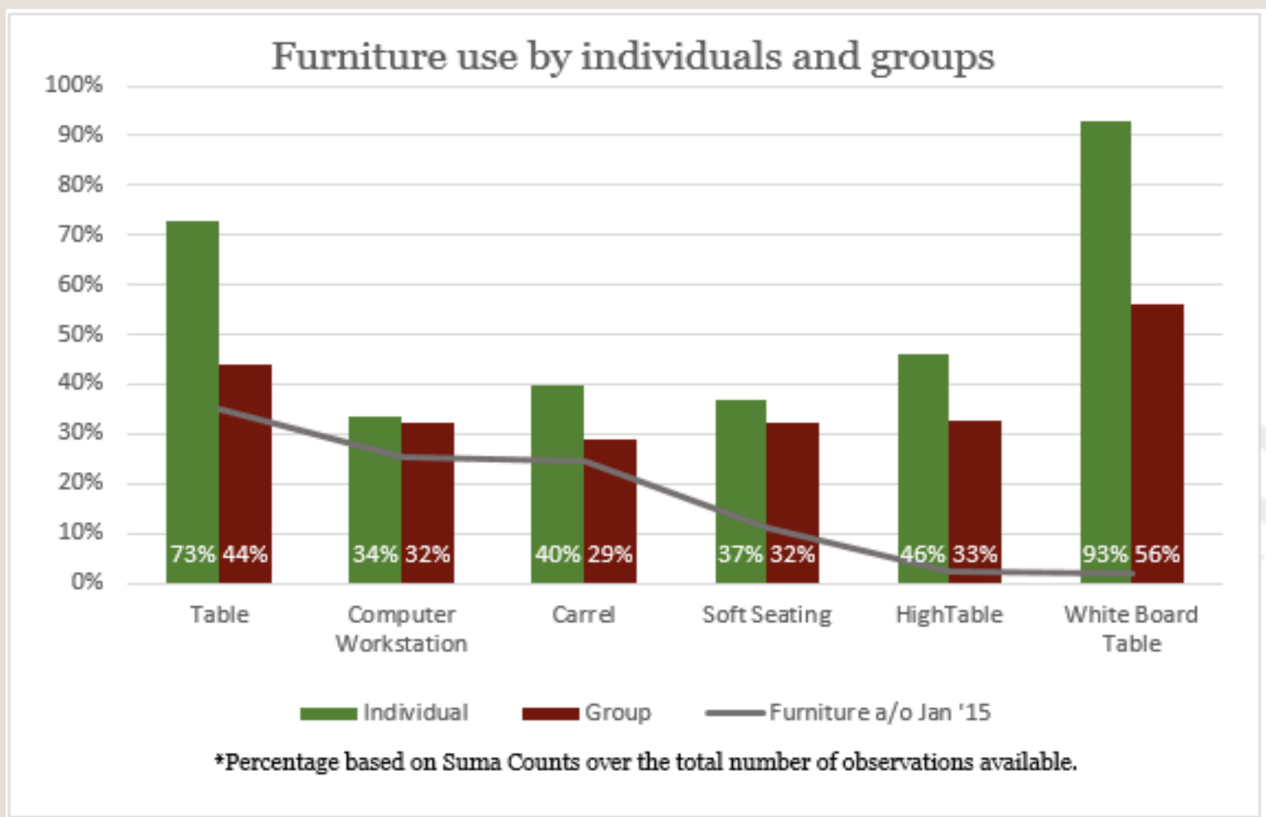
Furniture and study spaces in the library



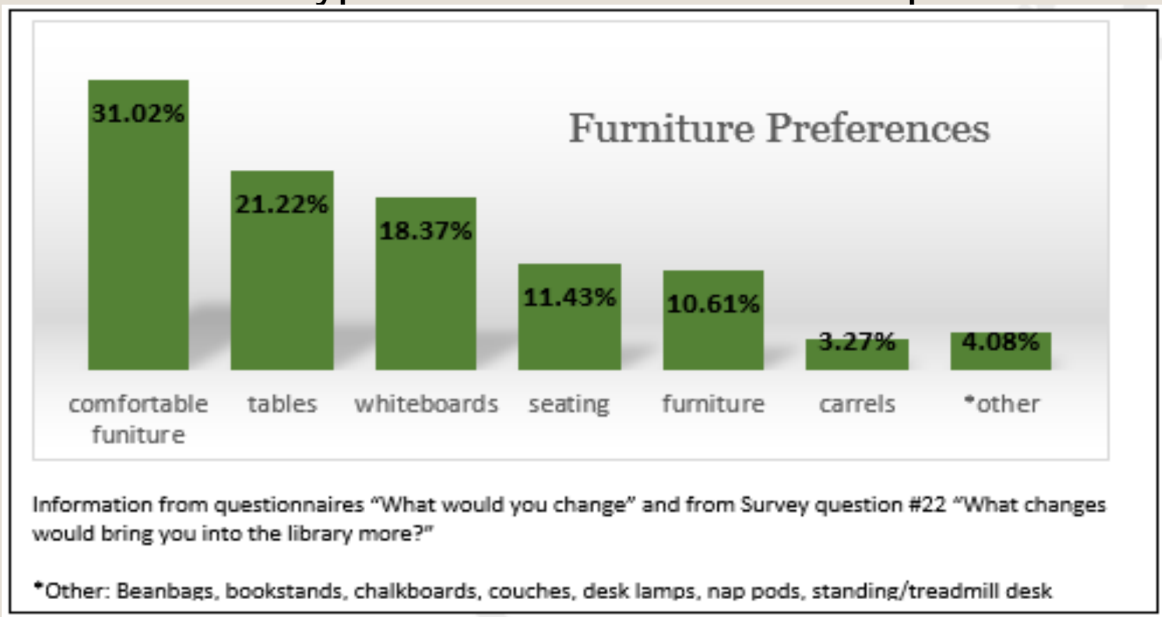
13,144 FTE students
1140 seats in library
517 study spaces



8.6% FTE seating capacity currently available
10 - 20% FTE seating capacity recommended*



What type of furniture do students prefer?



96% prefer soft arm chairs over wood frame chairs

83% prefer chairs with wheels and adjustable arms over wood frame chairs

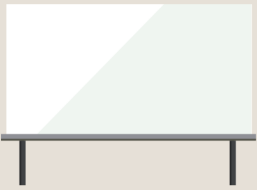


31% of written comments asked for more comfortable furniture



71% prefer computer workstation tables over the cubicles

Whiteboards and whiteboard tables are mentioned most often when asked "what do you like most about the library?"



Students like to spread out when they study



Q/WB

Student comments about the furniture.

"I would love to see new comfy chairs, upgraded chairs and tables, and maybe even new carpet. The library is nice, but it's also a bit run down."

"Really need to upgrade the furniture. Doesn't need to be flashy. Just newer and more comfy."

"The furniture needs updated it looks very outdated - especially because we have so many modern buildings. Also, I think we need bean bag chair/comfy area."

Q/NAS

1,394 students completed the survey in September, 2015; 25% first-year, 12% sophomores, 13% juniors, 21% seniors, 29% graduate

Total student population at WSU is 18,059, according to the 2015-2016 Student Factbook. For a population of this size, an appropriate sample size with 95% confidence level and a margin of error of +/-3 is 1,008. With 1,394 responses, over 1,300 of which were valid, we are confident that our response rate is sufficient to draw conclusions.

Data Sources: GT = Gate Traffic, SUMA = occupancy counts, NAS = needs assessment survey, WB = whiteboard questions, Q = questionnaires, Wi-Fi = Wi-Fi use

*Leighton, P.D. & Weber, D.C. (1999). Planning academic and research library buildings. Chicago, IL: American Library Association. (pp 116 & 724)

V. Furniture

Summary

This section includes information on preferences and actual use from the questionnaires, whiteboards and, SUMA counts that show what furniture was actually in use from the Spring 2015 semester as well as identifying student preferences from the needs-assessment survey.

Recommendations

1. Add more seating to meet industry recommendation of seating for 10-20% FTE.
2. Add more tables/study space.
 - a. For group study areas, add a mixture of larger conference type furniture areas and soft seating areas with whiteboard availability and technology access.
 - b. For individual study areas, add a variety of tables, carrels, and soft seating with the same easy access to whiteboards and technology.
3. Replace wooden-armed chairs with black mobile study chairs.
4. Replace aging wooden four-seat carrels with a mixture of newer single or two-sided wooden carrels, open table carrels with dividers, whiteboard tables, and soft seating areas.
5. Future furniture purchases need to reflect the diverse, multifunctional/purpose expectation and desires of students.

Rationale

The type of furniture students choose varies greatly based on a number of factors. However, there is a consistent desire for more comfortable spaces with a variety of seating choices, more tables, and access to whiteboards. Individuals want large tables for spreading out their study materials, while groups prefer them to allow for multiple people. When working at tables the students want more mobile, adjustable, comfortable chairs. The carrels are the least utilized furniture choice for groups but individuals like them because it provides privacy and personal space to concentrate. Individuals identify a need for comfortable chairs for reading and down time, while groups identify a need for more group computing areas and soft seating for social interactions and brainstorming.

Current Use Patterns

Tables are the most-used type of furniture by both individuals and groups, while whiteboard tables have the highest demand relative to their availability. On average, the tables throughout the library are 73% occupied and 93% of the whiteboard tables are occupied.

Student Quotes

“More seating [is needed] on the 2nd floor. In the afternoon it is hard to find a table free.” (NAS)

“Really need to upgrade the furniture. Doesn't need to be flashy. Just newer and more comfy.” (Q)

Recommendation 1: Add more seating to meet industry recommendation of seating for 10-20% FTE.

Recommendation 2: Add more tables/study space.

With 1,139 seats, the Dunbar Library has the capacity to seat 8.6% of the FTE enrollment of 13,144. Many students identify a challenge with finding adequate seating in the library. The most recent industry standard was issued by ACRL in 1995. With approximately 14% of the student body living on campus, Wright State University constitutes a “typical commuting university.” The recommended seating capacity for a commuting university ranges between 10%-20% (Leighton and Weber, 1999, p. 724). Based on recommendations from a panel of library consultants, for a non-residential campus a figure “closer to 15%” is adequate (Leighton and Weber, 1999, p. 116). Even at the lowest recommended seating capacity of 10% FTE, Dunbar Library’s current seating capacity falls short.

The inadequate amount of seating can be particularly problematic when students’ study needs tend to be similar. For example, the zone based analysis showed that although the overall building numbers indicated a 75% average occupancy, the quiet study areas were 98% full.

Recommendation 3: Replace wooden-armed chairs with black mobile study chairs.

Students overwhelmingly prefer the black, plastic “cachet” style chair (83%) over the wood chair when working at tables. The cachet chair has more mobility, is adjustable and has armrests. This preference was evident for both individuals and groups. (WB)



Recommendation 4: Replace aging wooden 4 seat carrels with a mixture of newer single or two sided wooden carrels, open table carrels with dividers, whiteboard tables and soft seating areas.

There are two primary reasons for the recommendation to replace the wooden 4-seat carrels: condition and student preference.

During the regular building counts, Assessment Team members noted the condition of many of the carrels was poor. Many of the carrels were peeling and cracked.

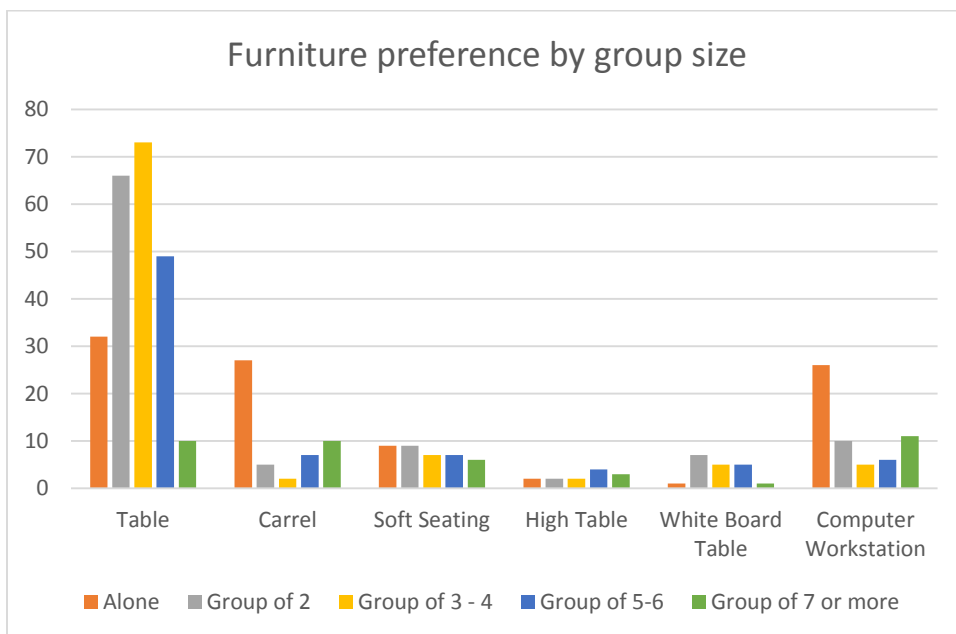
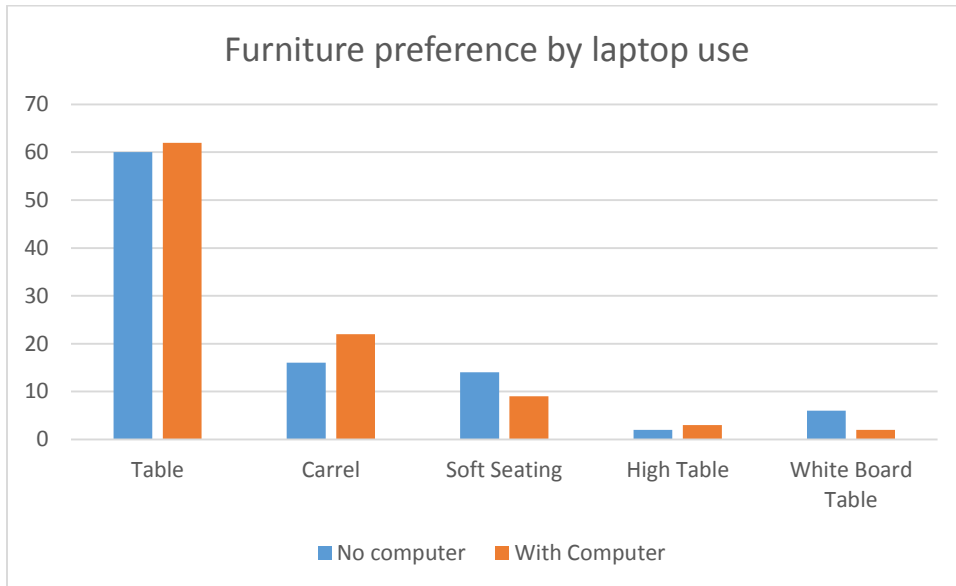
Student preferences support the need for new carrels.

Students studying individually are fairly evenly divided in the use of table carrels vs wooden carrels (52% vs 48%). Groups have a decided preference for the table carrels (85%) Students commented that the table carrels are brighter and spacious with accommodation for multiple people. Those who prefer the wooden carrels expressed a preference for the privacy, ability to block out distractions, and personal space to concentrate. (WB)



Recommendation 5: Future furniture purchases need to reflect the diverse, multifunctional/purpose expectation and desires of students.

Students' furniture choices are not static but, rather, are responsive to their studying needs at various points in time. Students were more likely to select soft, comfortable seating when they were studying without laptops or tablets and more likely to select a carrel if they were using a laptop. However, at least 60% of students opted to sit at a table regardless of whether they were using technology.



(SUMA)

Students prefer the soft arm chairs (96%) over the wood frame arm chairs. The soft chairs are “comfy and I can study longer.”



Students prefer the workstation tables (71%) over the workstation cubicles (29%). The workstation tables are easier for groups with more space to spread out their materials.



Whiteboard tables are the preferred table (73%) to a round table. The whiteboard tables are better for tutoring, study group interaction and visual learning. The larger tables are good for spreading out and group work.



Whiteboards and whiteboard tables are mentioned most often for furniture when asked “What do you like most about the library?” on the questionnaires and survey. The students prefer the wider whiteboards (96%) to the narrow because there is more room to write, good for group work and easier to use. (WB)



On the whole, tables are preferred over other furniture choices, both by individuals (73%) and groups (44%). Whiteboard tables are in use 93% of the time by individuals, by far the most popular seating choice, when available, for groups. The computer workstations and soft seating utilization was evenly split between individuals and groups. As expected, carrels are used by individuals more than groups, but a surprising number of the carrels (29%) were used by students working in a group setting. (SUMA)

Additional Information

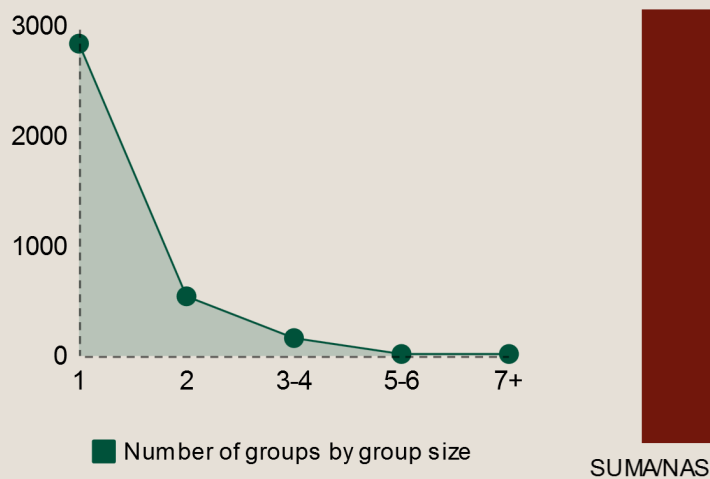
The library has begun upgrades to furniture in the building in response to early analysis after the Spring 2015 semester. New purchases have been made to reflect student preferences, including: replacing 72 wood frame chairs with black plastic cachet-style chairs on the 2nd floor, adding 3 new large oval conference tables, adding 6 new whiteboard 36” round tables for the tutoring area, painting whiteboard surfaces on walls and tables, and removing 7 carrels that were falling apart.

Diverse Spaces

Dunbar Library Building Use Study 2015

"I like that there is a choice of where to sit depending on what you are doing, whether studying with friends on the first or second floor, or by yourself in the quiet study area."

Size of groups visiting the library

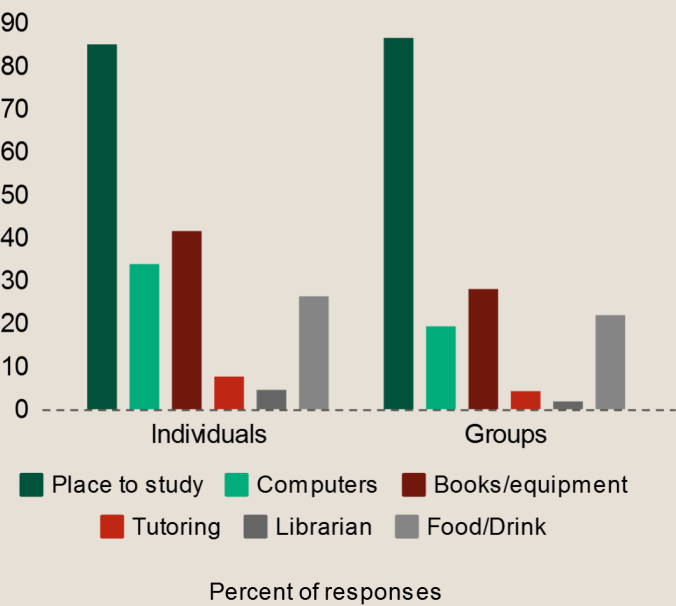


Three times more individuals study in the library than groups.

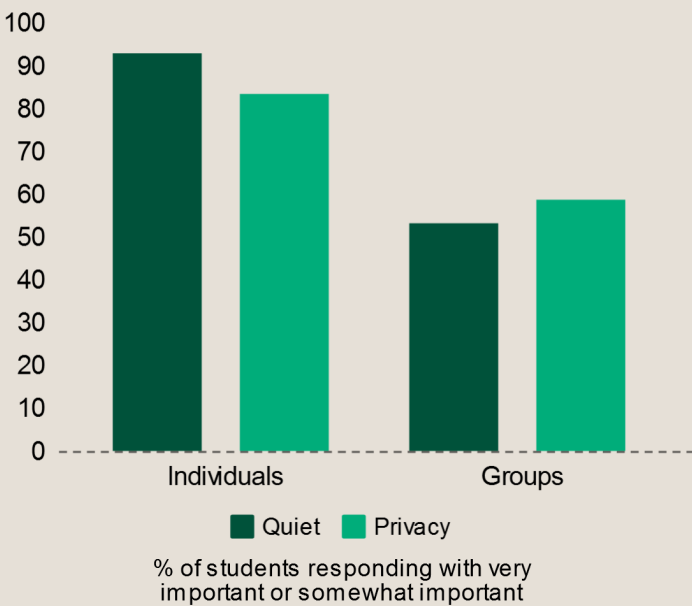
Proportionately, more students work in groups during peak times.

The majority of individuals and groups stay for 1- 2 hours.

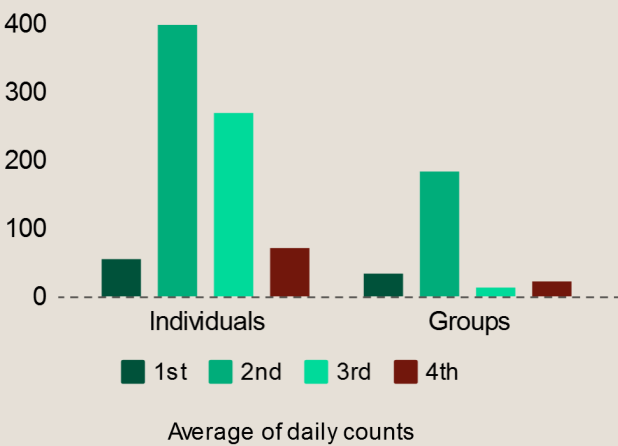
Reasons for visiting the library



Importance of quiet and privacy



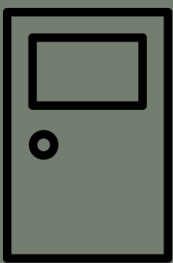
Floor preference for individuals and groups



2/3 of students studying in pairs were on the 2nd floor.

Larger groups convened on the 2nd floor more than the 1st floor.

3rd floor quiet areas were at 98% capacity during peak times.



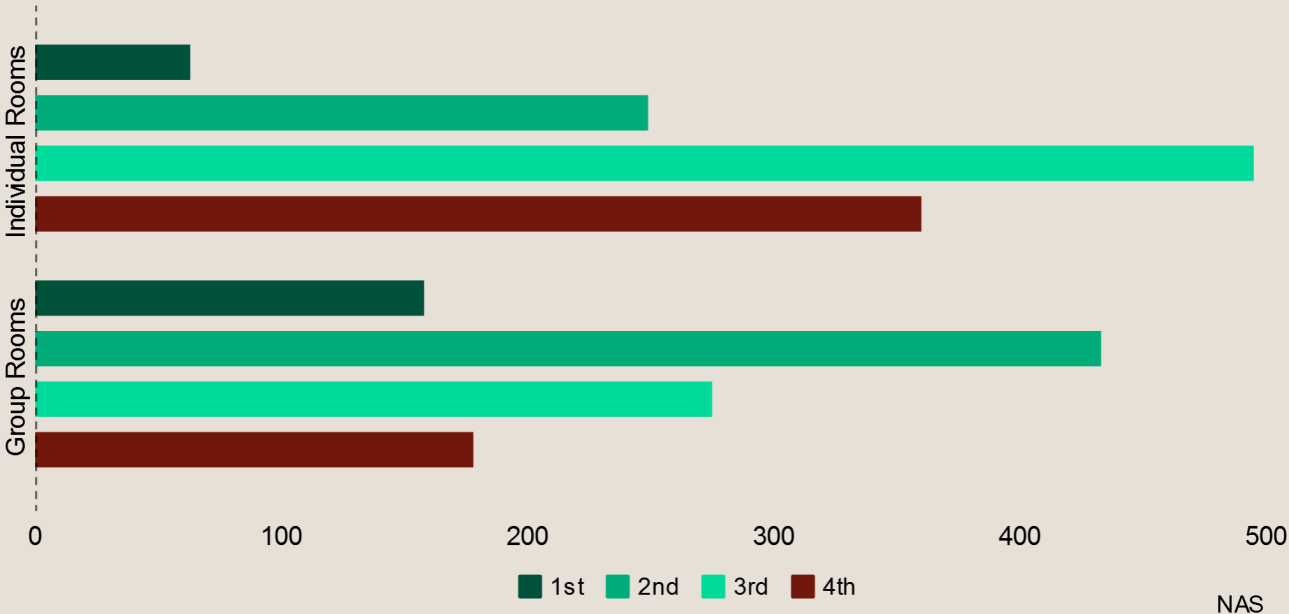
96% of students believe individual study rooms are needed

98% of students believe group study rooms are needed

"The library is always over crowded and loud, so maybe have private rooms you could study in alone or with a group."

"I think having individual study rooms that you can book out would be great. Finals last year was a nightmare trying to find a quiet place."

Floor preference for study rooms



1,394 students completed the survey in September, 2015; 25% first-year, 12% sophomores, 13% juniors, 21% seniors, 29% graduate

*Total student population at WSU is 18,059, according to the 2015-2016 Student Factbook. For a population of this size, an appropriate sample size with 95% confidence level and a margin of error of +/-3 is 1,008. With 1,394 responses, over 1,300 of which were valid, we are confident that our response rate is sufficient to draw conclusions.

Data Sources: GT = Gate Traffic, SUMA = occupancy counts, NAS = needs assessment survey, WB = whiteboard questions, Q = questionnaires, Wi-Fi = Wi-Fi use

VI. DIVERSE SPACES

Summary

This section considers the various ways students use the library building and the need for a mixed-use space. Elements involved include study areas based on group size, furniture preferences, technology needs, type of work being done, and environmental factors. The needs-assessment survey, the whiteboard questions, the paper questionnaire, and the SUMA counts provide a picture of the preferences students have for how and where to study in the library.

Recommendations

1. Create private study rooms, on any floor of the library, with two-hour checkout periods.
2. Designate dedicated zones for individual and group study, both quiet and active.
3. Enhance, highlight, and maintain study areas with a diverse set of furniture and atmosphere. Special attention should be given to the cleanliness and condition of the building and the maintenance of the elevators.

Rationale

Students appreciate the library as a place to study, but there is a need for improvement in how the space accommodates student needs. Students overwhelmingly want more privacy and more quiet areas, which suggests the need for closed study rooms. Space to spread out, access to outlets, and comfortable furniture are also key. Although it is not possible to please every student, enough similarities exist between individual and group studiers to enhance the library's appeal and functionality for the needs of students today and in the future.

Current Use Patterns

The building is set up for group studying on the 1st and 2nd floors, and quieter individual studying on the 3rd and 4th floors. However, students fill spaces in their own, often unexpected, ways. Many groups study on the upper floors, and many individuals do their work on the 2nd floor. Lack of available space on the 1st and 2nd floors and groups that work on solo projects together for a sense of community rather than shared work contribute to the number of groups on the 3rd and 4th floors. Individuals on the 2nd floor report a desire for the ambient noise of a social space, comfortable furniture, and natural lighting. On average, there are approximately four times as many people working alone than working with at least one other person. When students do work in groups, the most common group size is a group of two. The library must provide an environment for both individuals and groups. (SUMA)

"I think having individual study rooms that you can book out would be great. Finals last year was a nightmare trying to find a quiet place."

"There is a variety of areas. It's helpful to have quiet zones, group zones and zones where people don't have to be quiet. Those whiteboard tables are AWESOME."

"For me, an ideal library would have a 1st floor for groups, events and social discussion. But I would like the majority of the library to be a silent place for independent study. Multiple restrooms on each floor are necessary, as well as a cell phone area on each floor." (NAS)

Recommendation 1: Create private study rooms, on any floor of the library, with 2-hour checkout periods.

Nearly all students (96%) believe individual study rooms are needed in the library, and 98% identify a need for group rooms. These numbers, coupled with student concerns about the lack of enforceable quiet areas highlight a significant gap between current library design and student needs.

A majority of students would place individual study rooms on the 3rd floor, but a substantial number also identify the 2nd and 4th floors as appropriate locations for individual study rooms. Most people want group study rooms on the 2nd floor, but at least 20% of students identified a need for group study rooms on each floor. (NAS)

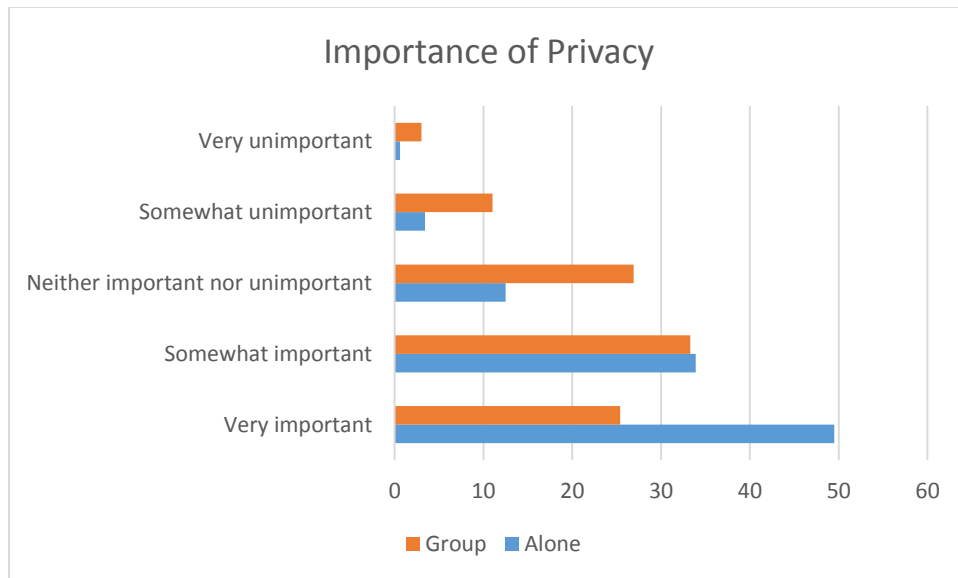
Individual study rooms

4	361
3	498
2	249
1	63
Not Needed	31

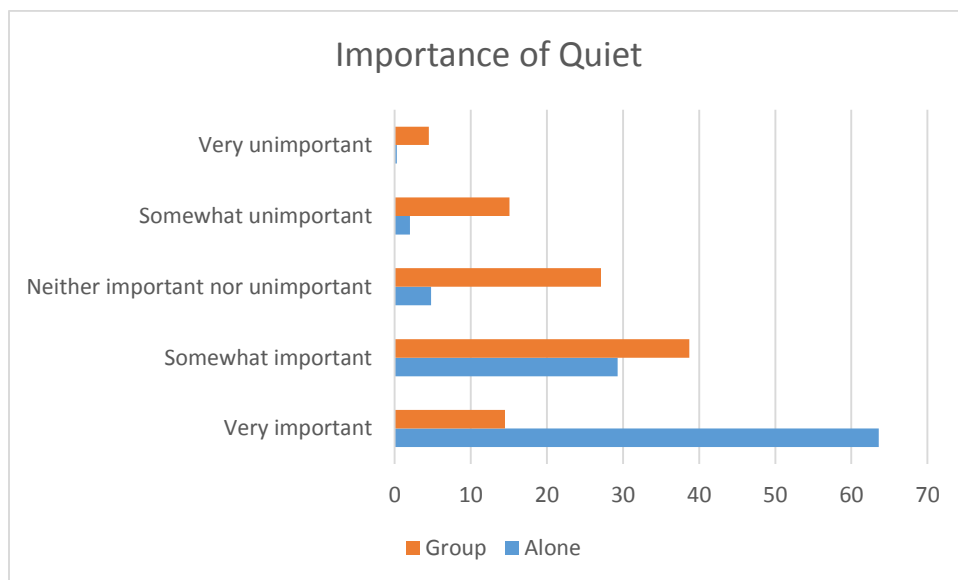
Group study rooms

4	178
3	279
2	434
1	158
Not Needed	12

While the standard campus tour guide orientation includes the oft-heard phrase, “The higher up you go in the library, the quieter it is,” the 4th floor is not uniformly perceived as a quiet study space for individuals, in part because of limited seating, but also because the space is open to the atrium and ambient noise levels cannot be regulated. Quiet space may make more sense on the lower levels because the sound travels so freely throughout the building.



Privacy is important for students both when working alone and with a group. Indeed, almost 60% of users think privacy is important in a group. (NAS)



Quiet is extremely important to individuals. Ninety-two percent of students identified quiet as either very or somewhat important when studying alone. It is also notable that more than half of students identified quiet as important when working in groups. Many students identified quiet study areas as something that would bring them to the library more.

- “More quietness on the 2nd floor. Maybe make the group study people move into different rooms with the doors closed and enforce other students to be quiet.”
- “The library is always over-crowded and loud, so maybe have private rooms you could study in alone or with a group.”
- “Quiet rooms. Sometimes it's so loud I can't focus and have to find another place. People like to use the center area as a hangout place.” (NAS)

Recommendation 2: Designate dedicated zones for individual and group study, both quiet and active.

As demonstrated above, individuals and groups have many of the same needs when choosing a study space. Preferences tend to be dictated by the desire for quiet or ambient noise, regardless of whether students are working alone or in groups. Each floor of the library should accommodate both individual and group users, and designations should focus on permitted levels of noise rather than group size.

When you go to the library alone, it's typically because you want

Place to study	Use library computers	Use books / equipment	Meet w/ tutor	Meet w/ librarian	Purchase food / drink
85%	34%	42%	8%	5%	26%

When you go to the library with a group, it's typically because you want

Place to study	Use library computers	Use books / equipment	Meet w/ tutor	Meet w/ librarian	Purchase food / drink
87%	19%	28%	4%	2%	22%

Whether individually or in groups, the vast majority of students come to the library to study.

When students go to the library alone, they tend to look for a quiet space, a chance to relax, or to use resources. When in groups, students are more likely to work on class projects or socialize. However, it's notable that sizable numbers of students continue to need library computers, books, or equipment even when working in groups. (NAS) There are relatively few computer stations that currently accommodate group work.



Students need a variety of furniture options, a variety of sound levels, and a variety of computer options in order to support their diverse needs. For more information on furniture, see section V; for more information on student's computer needs, see section VII.

Recommendation 3: Enhance, highlight, and maintain study areas with a diverse set of furniture and atmosphere. Special attention should be given to the cleanliness and condition of the building and the maintenance of the elevators.

Enhancing study areas to meet students' needs involves looking at multiple factors and how they work together. Students are clear and consistent in identifying the needs for their study habits. A functional place to study includes Wi-Fi, adequate tables or work surfaces, outlets, and lighting. For students working alone, nearly all need quiet and most need privacy; while these are less important when working in groups, they are still identified as important for more than half of students.

When you are studying alone, how important are the following?

	Very Important or Somewhat Important	Somewhat Unimportant or Very Unimportant
Quiet	93%	2%
Wi-Fi	98%	1%
Tables & Work surfaces	98%	<1%
Outlets	91%	2%
Lighting	97%	1%
Privacy	83%	4%
Food/Drink	63%	12%
Comfortable Furniture	93%	2%

When you are studying with a group, how important are the following?

	Very Important or Somewhat Important	Somewhat Unimportant or Very Unimportant
Quiet	53%	20%
Wi-Fi	97%	1%
Tables & Worksurfaces	98%	1%
Outlets	92%	1%
Lighting	96%	<1%
Privacy	59%	14%
Food/Drink	62%	11%
Comfortable Furniture	91%	2%

Quiet, Wi-Fi, tables, outlets, lighting, food/drink, and comfortable furniture are all vitally important to students, whether they are working alone or in a group. Privacy is more important to students when they are working alone, but 60% of students identified a need privacy during groupwork. The library should continue to support these needs in all areas. (NAS)

“The setup is great, except the small cubicles on the 3rd floor and 2nd floor which leave no room to get materials all out on the table. The fact that the 3rd and 4th floors overlook the 2nd disturbs me because the noise is usually distracting even if you are technically away from the larger groups.”

The importance of the ambience of the study spaces should not be minimized. Overwhelmingly, students indicated that changes to the physical building, including furniture, would bring them to the library more. Noise control was also important, but it was only mentioned a third as much as building enhancements. The cleanliness of the building was identified as an important factor. (NAS) Many students commented that the building was outdated and dirty

Many students said that better aesthetics would bring them to the library more. These suggestions included

“A fresh coat of paint on the terrible eyesore walls, a cleaner patterned carpet, and more outlets.”

“A more welcoming feel when you walk into the main entrance. There’s currently lots of concrete, etc.”

“Vacuum the place once in a while.”

“I really think the chairs and tables could be updated. The library also smells kind of... weird.”

“I feel like the library needs a face lift. It’s nice but I would love to see new comfy chairs, upgraded chairs and tables, and maybe even new carpet. The library is nice, but it’s also a bit run down.”

“The interior needs an update and the exterior a facelift it looks like a prison.”

“Updated furniture like what’s in the student success center.”

“There should be a bathroom on the 1st floor (so much coffee on the 1st floor and no bathroom). Making the space more friendly and welcoming on the 2nd-4th floors (the space is somewhat dated and not welcoming), Adding more outlets to the tables everywhere for students to charge devices, more hub spaces for groups to meet and work on projects.” (NAS)

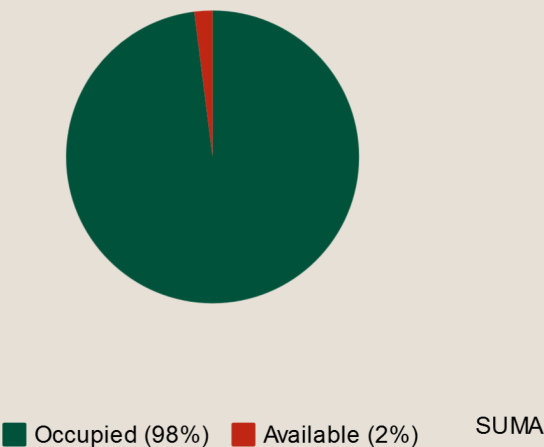
Technology

Dunbar Library Building Use Study
2015

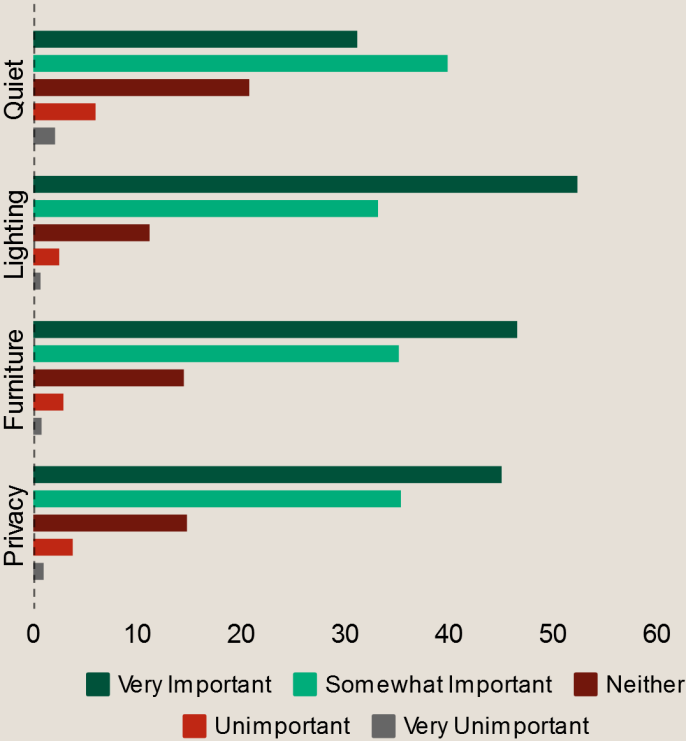
"There should be more public computers -- all the computers on the 2nd floor are pretty much always occupied, and it is very hard to get in and use one."



Computer use at peak hours



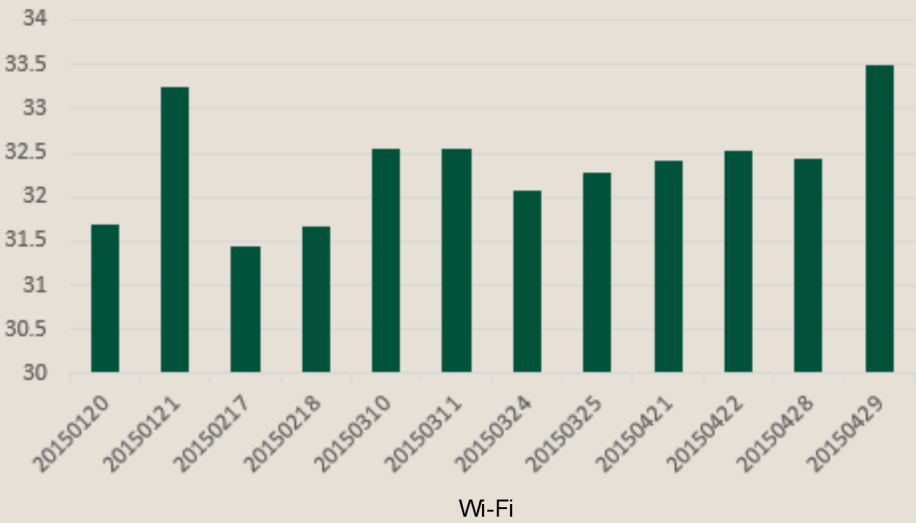
Importance when choosing a computer



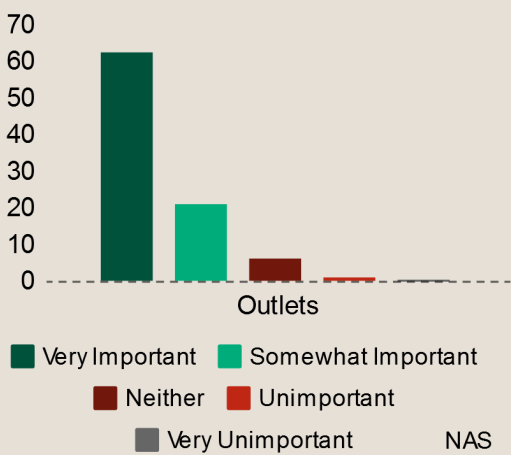
54% of students report using their own laptops

45% report using the library computers or a combination of library computers and personal laptop or tablet

Wi-Fi average signal quality by date



Outlets are important when choosing a study space

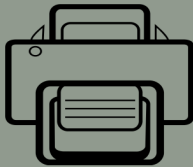


"Wi-Fi and outlets are something I find to be very important. Many assignments in my classes are supposed to be turned in online before the class starts. In the library I'll use my laptop to do this...[if] the Wi-Fi isn't working, it will prevent me from completing the assignment on time."

If you were to design the building, on which floor would you place the following services?



	Computers	Printers
4	306	390
3	404	472
2	647	643
1	358	459



"We should have public computers on 3rd and 4th level also. So that it'll be helpful to those who need quiet study as well as who need access to online resources."

NAS

1,394 students completed the survey in September, 2015; 25% first-year, 12% sophomores, 13% juniors, 21% seniors, 29% graduate

Total student population at WSU is 18,059, according to the 2015-2016 Student Factbook. For a population of this size, an appropriate sample size with 95% confidence level and a margin of error of +/-3 is 1,008. With 1,394 responses, over 1,300 of which were valid, we are confident that our response rate is sufficient to draw conclusions.

Data Sources: GT = Gate Traffic, SUMA = occupancy counts, NAS = needs assessment survey, WB = whiteboard questions, Q = questionnaires, Wi-Fi = wifi use

VII. TECHNOLOGY

Summary

This section considers the use of computers and laptops, printing, Wi-Fi, the placement of these options in the building, and service areas such as Laptops2Go.

The open ended questionnaire, whiteboard questions, and the needs-assessment survey provided opportunities for students to comment on library technology. The Assessment Team retrieved observed-use-data from SUMA counts, LabStat counts, and Wi-Fi use data. Students were pleased with the types of computer options available to them but they were critical of the older furniture, the quality of the Wi-Fi connection, and they desired a designated quiet computing area.

Recommendations

1. Increase the number of desktop computers in the library.
2. Provide computers and printing stations on all floors of the library.
3. Create a quiet computing area or place computers in designated quiet areas.
4. Replace computer cubicles with tables.
5. Investigate Wi-Fi quality complaints with CaTS.
6. Rewire the building to bring outlets to open study areas.

Rationale

The information commons computers are often completely filled. Student white-board comments indicate a desire for more desktop computers. Students indicate that computers and printing should be included on all floors of the library. Students preferred open tables over cubicles for computer use. SUMA usage counts confirmed this preference. Students expressed concern about the quality of the library Wi-Fi connection and the availability of electrical outlets on the open ended questionnaire.

Current Use Patterns

The library has a total of 110 computer workstations organized in three clusters. All of the computer clusters are found on the 2nd floor; 59 in the information commons, 23 in the former media room, and 28 in library classroom room 241. Eight OPAC kiosks are scattered through all four floors.

Students may borrow laptops from LapTops2Go. Laptops2Go has an inventory of 25 PCS and 25 MACS. Students may use specialized software in STAC. Wi-Fi connections are available through an unsecured network (WSU EZ Connect) and a secure network (WSU Secure).

Student Comments

“[An ideal library should have] enough computers for a good number of people so there isn't conflict over them.”

“An ideal library should ... have plenty of computers and printers available, as well as an IT person or department available whenever the need should arise. A library should also have resources for different majors, like large printers for posters or drawing areas for engineers.”

“An ideal library should have ... a lot of space for individual and group studying and a lot of computers.”

Recommendation 1: Increase the number of desktop computers in the library.

Student comments from the questionnaire and the survey suggest that the library needs more computers. Typical comments include statements such as, “There should be more public computers -- all the computers on the 2nd floor are pretty much always occupied, and it is very hard to get in and use one.” (Q) SUMA counts confirm that from 11:00 am to 2:00 pm, 98% of the computers are occupied during busy parts of the semester such as midterms and finals. Fifty percent of the computers are occupied on the least active days. (SUMA) Most users spend an hour per login in the information commons, an hour and half in the media room computers, but over 2 hours when using room 241/241 computers. (LABSTATS)

Students come to the library to use the computers. Nineteen percent of students coming to the library alone reported that using a computer is a reason that they come. This is surpassed only by studying (48%) and books (23%) as a reason for coming to the library alone. Computers are a less important draw to the library for groups than for individuals, but are still important for 11% of students coming in groups. Again, this is surpassed only by studying (47%) and books (15%) as reasons for coming to the library in a group.

The library should invest in more desktop computers rather than expanding Laptops2Go. Students reported a preference for a desktop computer when given an option of desktop to laptop. Students preferred the library computer (32) over the laptop (3). Comments included: more reliable; larger screen; easier to trouble shoot; and mouse. (WB)

When asked where they would most likely put Laptops2Go most students replied the 1st floor. (NAS) This suggests that many students probably want to use the laptops in class rather than the library building.

When asked about the use of both computers and laptops at the same time, student comments noted that they liked having the option to use both but they preferred the speed of the desktop to the portability of the laptop. They reported that it was difficult to print from a laptop. (WB) During SUMA counts, 75% of individuals used their own laptops or tablets, while 24% used a library computer. The remaining 1% used a combination of their own device with a library computer. (SUMA) The observed data differs from the way students self-reported their most typical tech use.

When you visit the library (alone/with a group), what type of computer do you typically use?

	Library Computer	My Own Laptop/Tablet	Both a library computer and my own laptop/tablet	No computer
Techalone	19%	54%	26%	25%
Techgroup	11%	62%	20%	7%

(NAS)

Nearly all students (98%) reported using some type of computer while at the library alone. The majority of students (54%) report using their own laptops, but a sizable proportion (45%) report using either the library computers (19%) or both a library computer and their own laptop or tablet (26%).

As when students work alone, nearly all students report using computers for group use in the library. More students (62%) report using their own laptops in groups than when working alone, but 11% report using library computers with group and 20% report using a combination of library computers and laptops.

The need for additional computers was evident throughout students' responses on both early questionnaires and the fall survey.

"There should be more public computers -- all the computers on the 2nd floor are pretty much always occupied, and it is very hard to get in and use one." (Q)

"More access to computers for printing (sometimes all the computers on the 2nd floor are occupied at the same time)." (NAS)

"There are never computers available when I am there and it is not a very homey feel." (NAS)

When asked, "*What do you wish the library had more of?*" responses included

- Access to computers during the end of the semester
- Computers places to spread out
- Computers in the quiet areas or other floors in the library
- More computers (20 times) (Q)

Recommendation 2: Provide computers and printing stations on all floors of the library.

While there was a clear indication that computers were needed on the 2nd floor more than any other, students thought computers would be good on every floor.

4	306
3	404
2	647
1	358
Not Needed	17

Q29 (NAS)

The perceived need for printing on every floor was stronger than the need for computers on every floor. There were only slight preferences for 2nd floor relative to the 3rd, 1st, and 4th.

4	390
3	472
2	643
1	459
Not Needed	16

Q29 (NAS)

This interest in spreading computers throughout the building was primarily driven by an interest in quiet computing. For example,

“A few computers on the 3rd floor. I go to the 3rd floor because of the silence and quiet BUT there are no computers on the 3rd floor. I go to the 2nd floor to get the necessities from the computer, then go to the 3rd floor to work.”

“We should have public computers in 3rd and 4th level also. So that it’ll be helpful to those who need quiet study as well as who need access to online resources.” (NAS)

Beyond the need for more computers, students also mentioned the location of computers.

“More computers on other floors.”

“Computers. Especially on 3rd & 4th floors.” (Q)

“A few computers that are just for people printing off their papers or a few worksheets so that when the library is full / busier waiting for a computer isn't so much of a gamble.” (NAS)

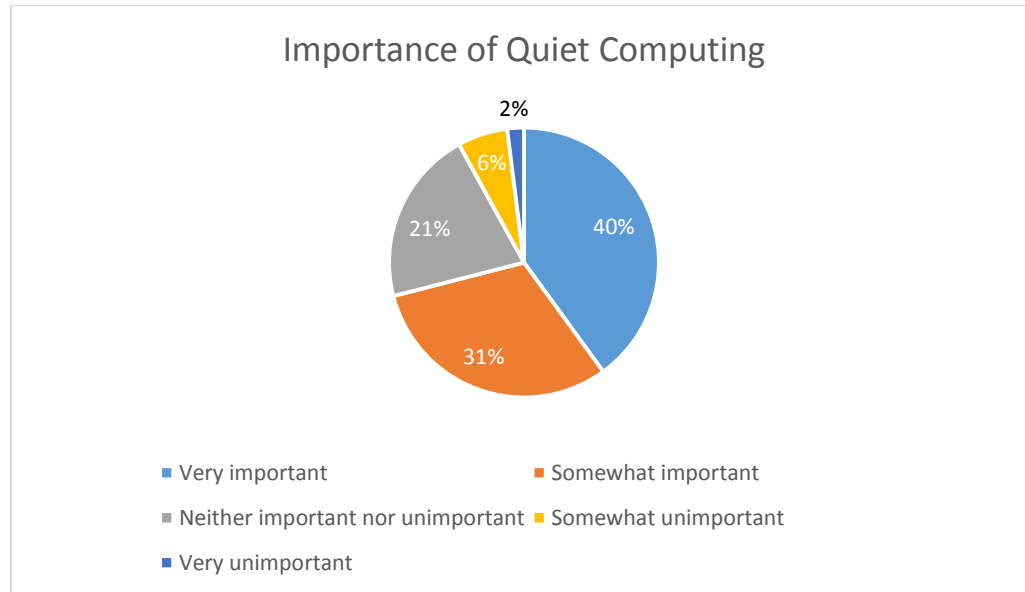
When thinking about the placement of additional computers, consideration should be given to the placement of computers relative to windows. Students commented that at some times of the day sunlight on the computer screen makes it difficult to read the screen.

“[It's important to me to find] a place where computer screens are easily readable during the day (try to prevent glare from lights).” (Q)

Window glare would make the atrium a poor place to expand computers for the information commons. More computers could be added to the 2nd floor annex, the 3rd floor, or the 4th floor.

Recommendation 3: Create a quiet computing area or place computers in designated quiet areas.

Quiet was a clear value of students describing their ideal library environment. Seventy-one percent of students identify quiet as either important (40%) or very important (31%) when using public computers, while only 8% said it was either unimportant (6%) or very unimportant (2%). (NAS)



Students suggested quiet computing on 3rd floor followed closely by 4th. The 2nd floor had almost half as many suggestions while 1st was recommended much less.

4	396
3	431
2	204
1	62
Not Needed	40

Q29 (NAS)

Again, student comments suggested that the need for computers on floors other than the 2nd floor was largely related to the need for quiet computing:

“Please put computers in the quiet study area!”

Many students indicated that quiet computing was key in thinking about what they would change about the library. When asked, “*What would you change?*” some typical responses included,

“DEDICATED Quiet computer rooms/spaces.”

“Put some quiet-study computers on other floors (where it's not so noisy).”

“Change computers on the 3rd floor→ it's quieter.”

"Quiet, but I also need a computer. The "Quiet Room" is often off-limits because of classes. I use it when I can. P.S. Ear plugs don't help." (Q)

"I would LOVE for there to be computers on the 3rd floor of the library (quiet study area). I think it is unfair to only have computers in the group study area where it is ALWAYS loud. I would come to the library much more often if there were more computers in a quiet area." (NAS)

"At least one dedicated quiet computer room/space. Yes, there are several labs/rooms with computers - none are dedicated to quiet computing. Yes, I can check out a laptop and take to 4th floor for a couple hours. I own a laptop, but prefer a full/large screen when doing research/papers."

"Computers everywhere, because every group of student needs them and individuals: quiet and non-quiet." (Q)

Recommendation 4: Replace computer cubicles with open tables.

The library should convert the current cubicles to tables and purchase computer tables rather than cubicles when expanding computing to other areas.

Students were asked about four different elements in using public computers: quiet, furniture, lighting, and privacy. At least 30% identified each of these as very important, and over 70% identified each as either very or somewhat important.

When you are using public computers, how important are the following?

	Very Important or Somewhat Important	Somewhat Unimportant or Very Unimportant
Quiet	71%	8%
Furniture	82%	4%
Lighting	85%	4%
Privacy	80%	5%

Q 30 (NAS)

Among these four different factors, furniture was seen as important by more students than any either factor. Eighty-two percent of students identified furniture as either very (47%) or somewhat (35%) important. (NAS) Students expressed preference for the larger computer workstation tables compared to the more common workstation cubicle at a rate of more than 3.5:1. (WB) Their comments suggested that this was due to both physical characteristics (particularly the ability to spread out), as well as characteristics about the rooms they're currently in (the tables are in the media room on the 2nd floor, and students identified these as better location and better for quiet computing, although there was concern that moving away from this model would lead to a loss of computers). Students requested both privacy and space to spread out in finding a place for the computers.

"Having access to a computer and large desk so I can spread out all my stuff."

"The desk for the computers. Make them more private."

Recommendation 5: Investigate Wi-Fi quality complaints with CaTS.

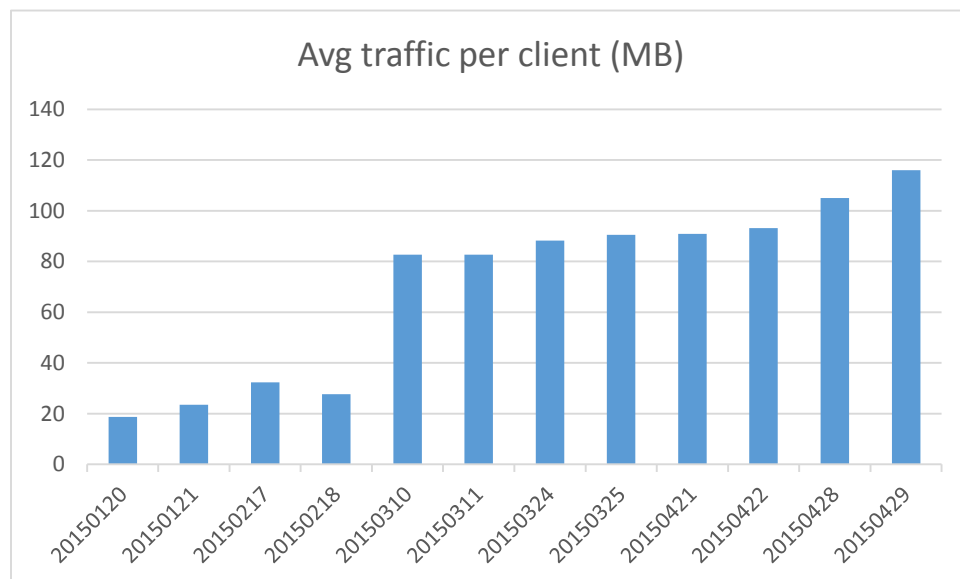
Students complained about the quality of the library Wi-Fi signal on 3% of the questionnaires. Comments ranged from the vague “more Wi-Fi” to the more vociferous “the Wi-Fi sucks.”

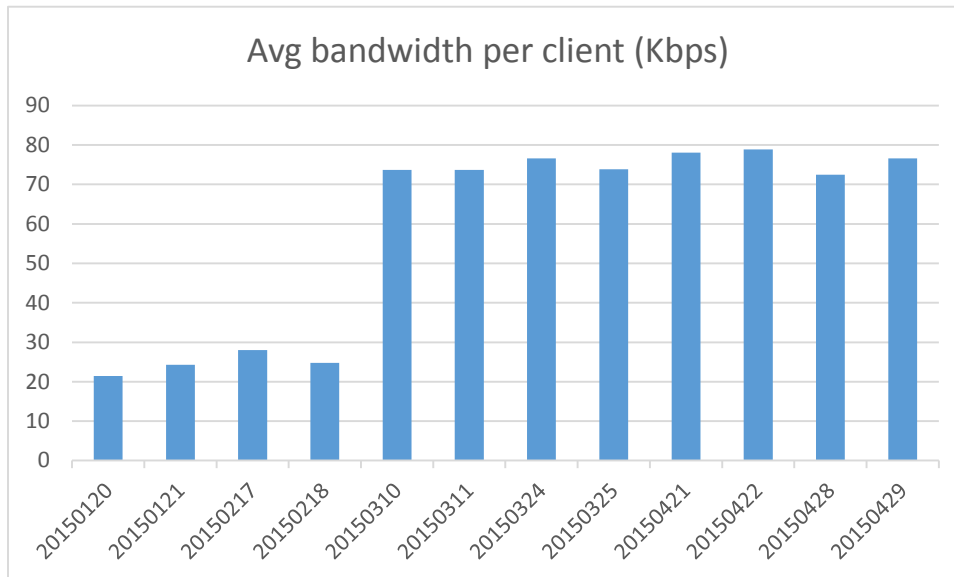
Students mentioned Wi-Fi in many different sections of the needs-assessment survey. Over 75% of students attending the library as an individual or in a group rate the Wi-Fi as very important.

	Very Important	Somewhat Important	Neither Important nor Unimportant	Unimportant	Very Unimportant
Wi-Fi Alone	81%	9%	1%	0%	1%
Wi-Fi group	76%	13%	2%	<1%	1%

Q28 and 29 (NAS)

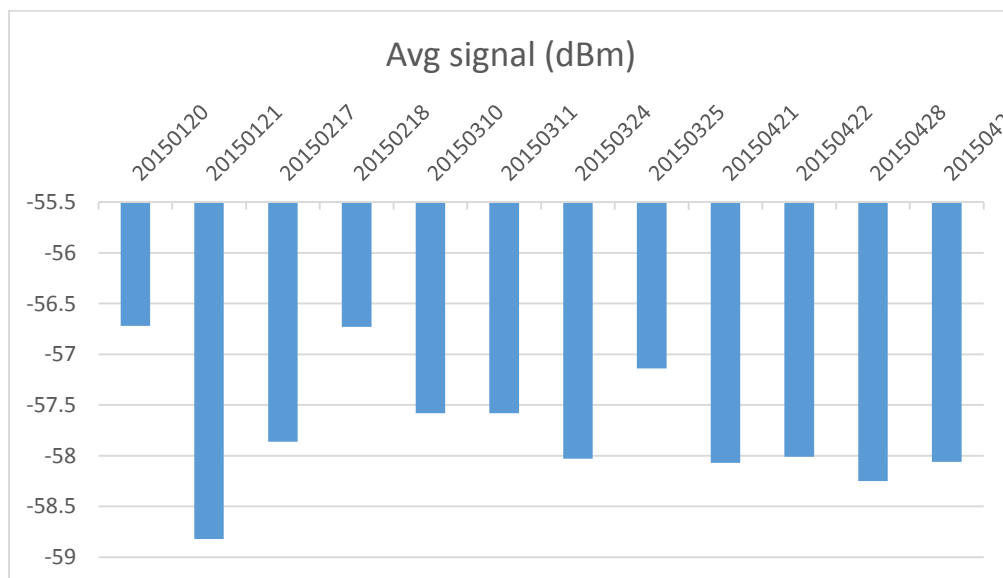
LCS obtained Wi-Fi session data for the days SUMA data was collected. Forty-two thousand sessions were analyzed by the average traffic and bandwidth per client and the average signal quality. The traffic and bandwidth has improved since March 10, 2015.



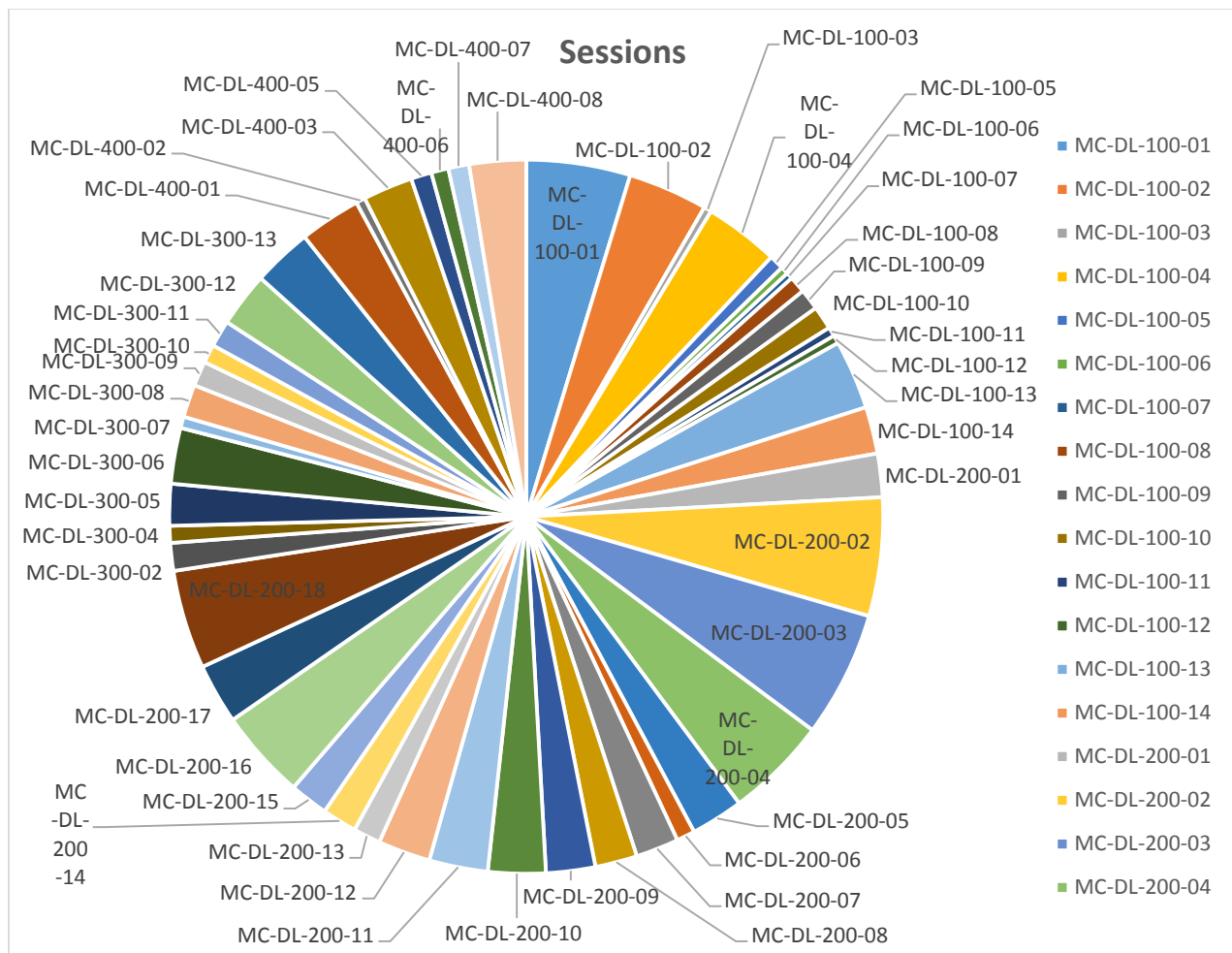


(Wi-Fi)

The University Libraries needs CaTS assistance to determine why students find the Wi-Fi service inadequate. A good signal level is considered -60dBm or better (Orzach. Network Analysis Using Wireshark Cookbook. 2013. Chapter 7 – Analyzing wirelies (Wi-Fi) problems.) The Libraries’ Wi-Fi signal quality fell within this range during the analyzed days. Wi-Fi quality is not an absolute value but dependent on many factors. A signal strength that is very good for e-mail interactions or web browser activity may not be sufficient for VoIP or streaming and high traffic can negatively influence quality. CaTS help is needed to determine which factors are responsible for poor Wi-Fi experiences in the library.



(Wi-Fi)



Each antennae is used almost equivalently. That is, the antennae placement seems to be good so that no single antennae is overburdened with traffic while another is not.

However, students continue to complain of the Wi-Fi quality particularly during finals. Comments included,

“Wi-Fi! The Wi-Fi sucks.”

“Wi-Fi connectivity, our Wi-Fi is often a huge nuisance, especially during finals weeks.”

“Access to Wi-Fi. Nearly campus wide. A few dead spots in the Library due to support beams.”

“Wi-Fi is weak during peak hours, but has gotten better since 2009.” (Q)

“The Wi-Fi can be really bad at times and really makes work difficult.”

“Wi-Fi and outlets are something I find to be very important. Many assignments in my classes are supposed to be turned in online before the class starts. In the library I'll use my laptop to do this, because it usually has the files that I need on it if I have done most of the work in advance. I need Wi-Fi to turn the project in, and an outlet if my laptop needs to be charged. If my laptop

battery is drained, or the Wi-Fi isn't working, it will prevent me from completing the assignment on time.” (NAS)

Given the disconnect between observed Wi-Fi performance and student satisfaction with the Wi-Fi, the library should work with CaTS to determine if there are other reasons the Wi-Fi quality could be affected such as blind spots or clamping.

Recommendation 6: Rewire the building to bring outlets to open study areas.

Students mentioned outlets many times in Questionnaire responses and often in their descriptions of the ideal library in the needs-assessment survey. Outlets were mentioned over 100 times in the 386 questionnaires distributed in the Spring 2015 semester. Over 60% of students identified the location of electrical outlets as very important to where they chose to study.

	Very Important	Somewhat Important	Neither Important nor Unimportant	Unimportant	Very Unimportant
OutletsAlone	62%	21%	60%	1%	1%
OutletsGroup	62%	21%	60%	1%	<1%

Q 28-29 (NAS)



In addition to more outlets and the placement of outlets some students made specific comments that some outlets are not grounded and need updated to fit three pronged chargers.

Student Comments:

"More 3-prong plugs for computer cords."

"More places to plug in my laptop to charge it."

"Electrical outlets by tables that are not along the wall."

"Updated outlets (outlets on tables)."

"Outlets readily available throughout the building."

"Computers are very much needed and so are outlets for those who bring their own computers." (Q)

APPENDIX A: DATA SOURCES

Each of the data sources the Assessment Team in this study is available for further analysis. This document clarifies where the data and/or explanatory material for each source is housed.

Gate Traffic (GT)

K:\lis\ASSESSMENT\Building Use Audit\Building Use Study data\Gate Counts

- **Hourly Gate Counts 2015 Spring Semester** - Includes the raw counts for each of the three entrances to Dunbar Library, peak traffic times for each entrance, and a cumulative count of all three gates' traffic and use patterns.

SUMA Counts (SUMA)

<https://staff.libraries.wright.edu/suma/analysis/reports/#/timeseries>

- All SUMA data are housed internally on the University Libraries server

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- **SUMA instructions** - Provides instructions for querying collected data

Questionnaires (Q)

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- **Building Use Student Questionnaire Codes** – Codes used for distributing surveys and for identifying whether there were patterns in responses by location
- **Questionnaire** – Template of questionnaire distributed in Spring 2015
- **Questionnaires – raw and coded** – Transcribed responses from questionnaires and coding thereof

Picto-Tales

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- Individual photos taken throughout the SUMA counts

Whiteboards (WB)

K:\lis\ASSESSMENT\Building Use Audit\Building Use Study data\Whiteboard questions - results

- 24 files indicating date and items compared – each file includes photos and transcriptions of student comments

- **2015 Whiteboard summary** – Aggregated responses to item comparisons with summary comments on general preferences

Wi-Fi Connections (Wi-Fi)

K:\lis\ASSESSMENT\Building Use Audit\Building Use Study data\WiFi and LabStats\Wireless\Access Point Locations

- **First/Second/Third/Fourth Floor Access Points** – Maps by floor of the library building indicating location and name of wireless access points

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- **Excel files** – files named by date and time of wireless users, sessions, and summaries of wireless use

K:\lis\ASSESSMENT\Building Use Audit\Building Use Study data\WiFi and LabStats\Computer Logins

- **LabStats 2014-2015** – includes numbers of users, logins, and hours on library public computers by month and location.

Needs-Assessment Survey (NAS)

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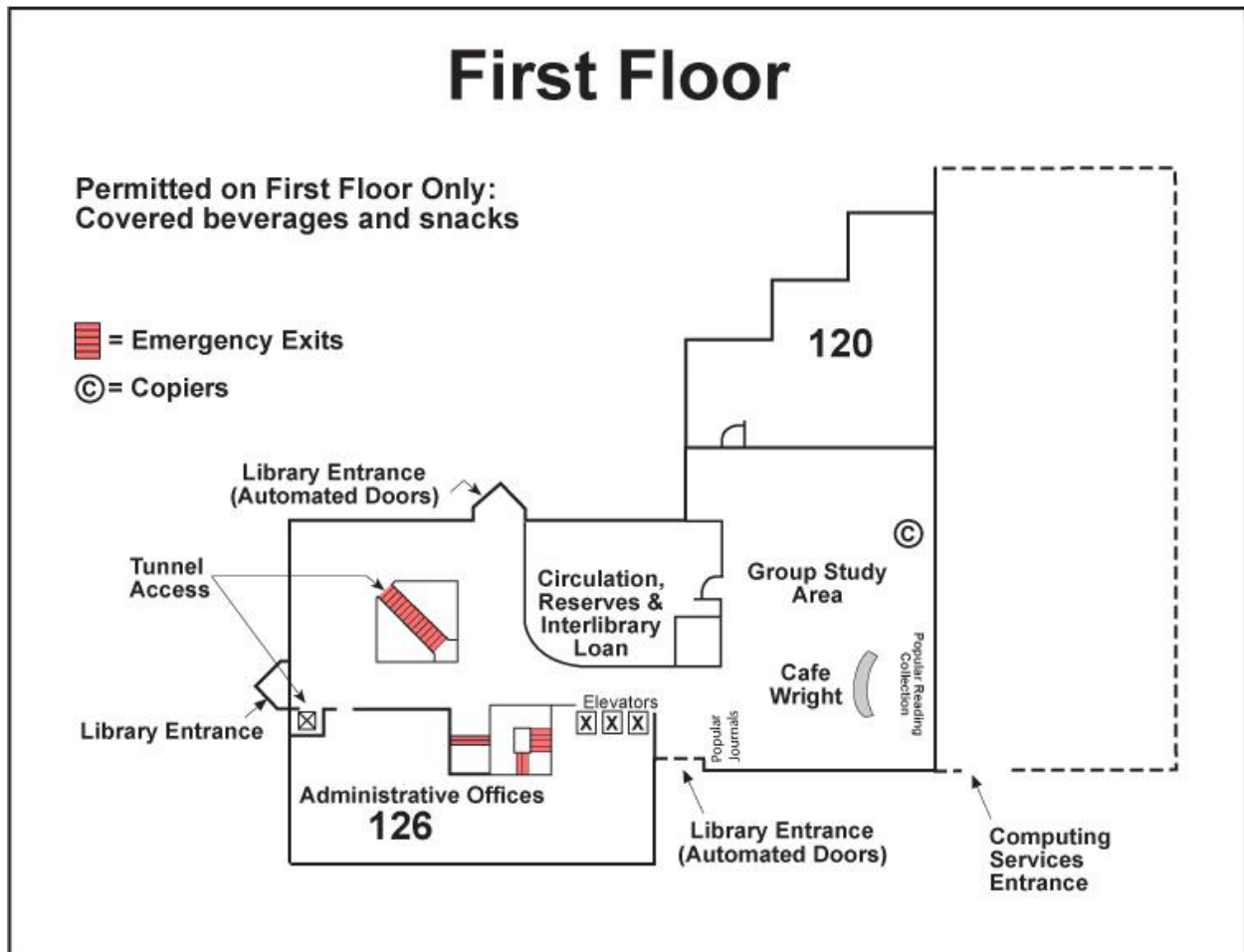
- **Needs-assessment survey SPSS** – raw survey responses in SPSS format
- **Final survey responses with demographics** – raw survey responses in Excel format
- **Library Survey Codebook** – all questions, response choices, codes for responses, and SPSS variable labels for the needs-assessment survey

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- **Q9** – responses to and coding of the question, “What do you like most about the library?”
- **Q12** – responses to and coding of the question, “When you go to the library alone, it's typically because you want (other - please explain)”
- **Q17** – responses to and coding of the question, “When you go to the library with a group, it's typically because you want (other: please explain)”
- **Q20; Q21** – responses to and coding of the questions, “Other than the library, where on campus do you study alone?” and “Other than the library, where on campus do you study with a group?”
- **Q22** – responses to and coding of the question, “What changes in the library would bring you to the library more?”
- **Q31** – responses to and coding of the question, “What do you think are characteristics of an ideal library building?”
- **Q32** – responses to and coding of the question, “Do you have any additional comments you'd like to share about the library?”

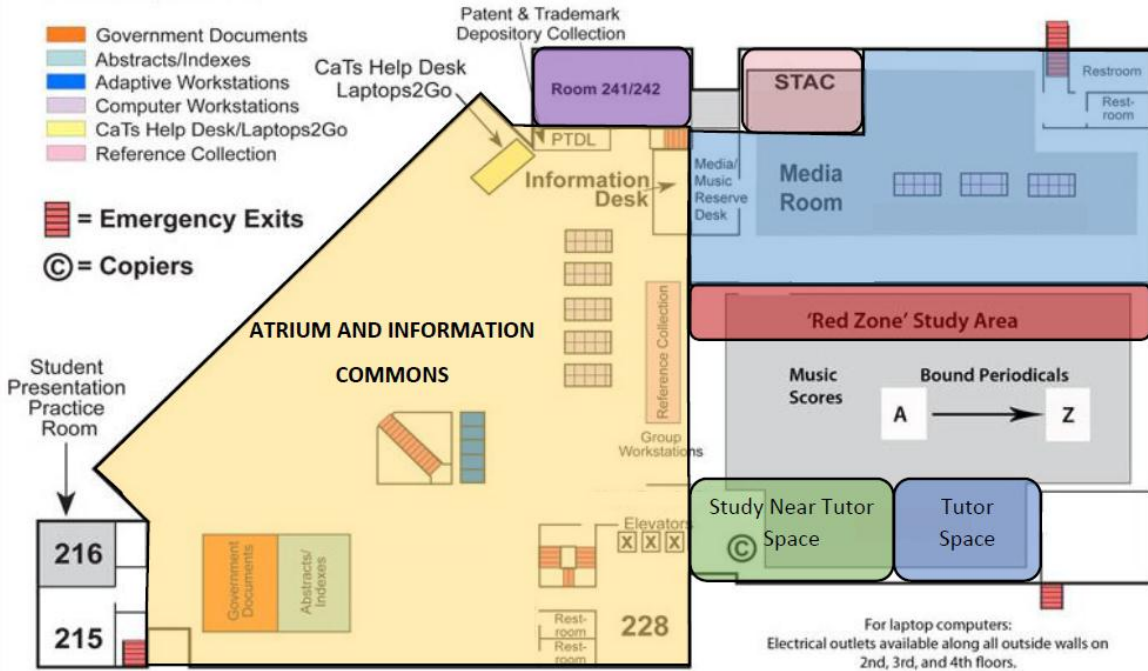
APPENDIX B: SUMA FLOOR ZONES

The SUMA building use counts were based on floor and location within each floor. Functionally, the public spaces on the 1st and 4th floors of the library are in one room and so were treated as one space. The 2nd and 3rd floors were divided into zones. These zones were developed based on designated or expected use as well as other factors such as ambient noise levels. These zones were also used in designating and distributing the questionnaires during the SUMA counts.



Second Floor

Permitted on Second Floor:
Drinks in spill-proof containers
NO FOOD permitted



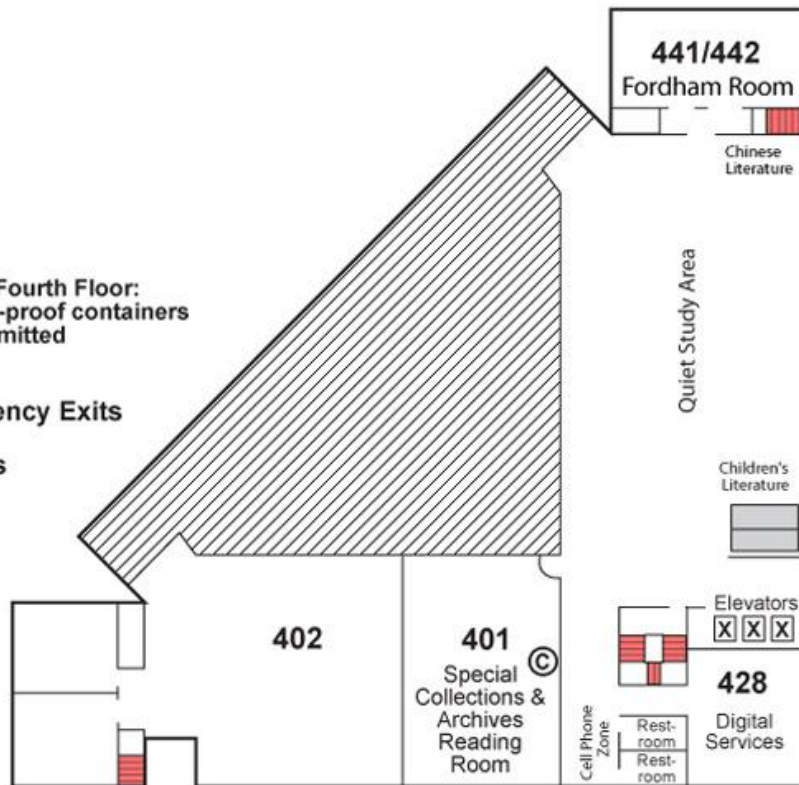
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Fourth Floor - Quiet Study Only

Permitted on Fourth Floor:
Drinks in spill-proof containers
NO FOOD permitted

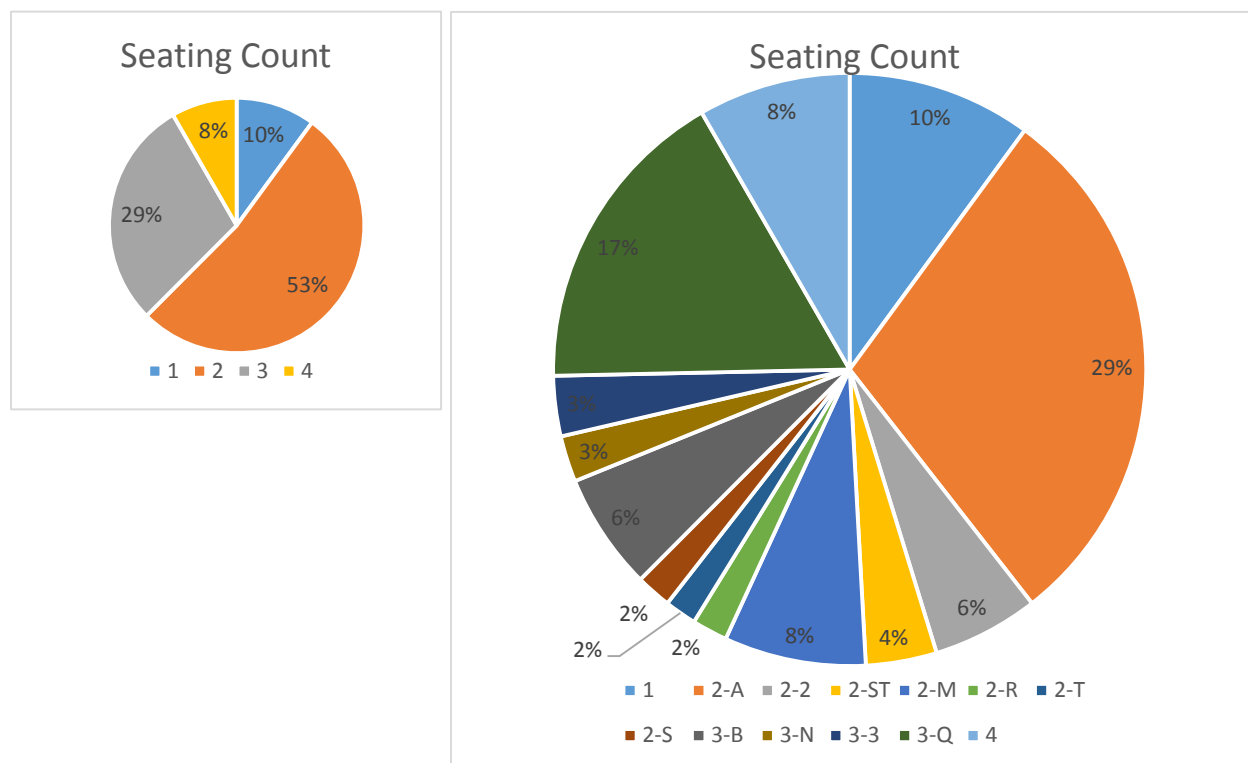
 = Emergency Exits

© = Copiers

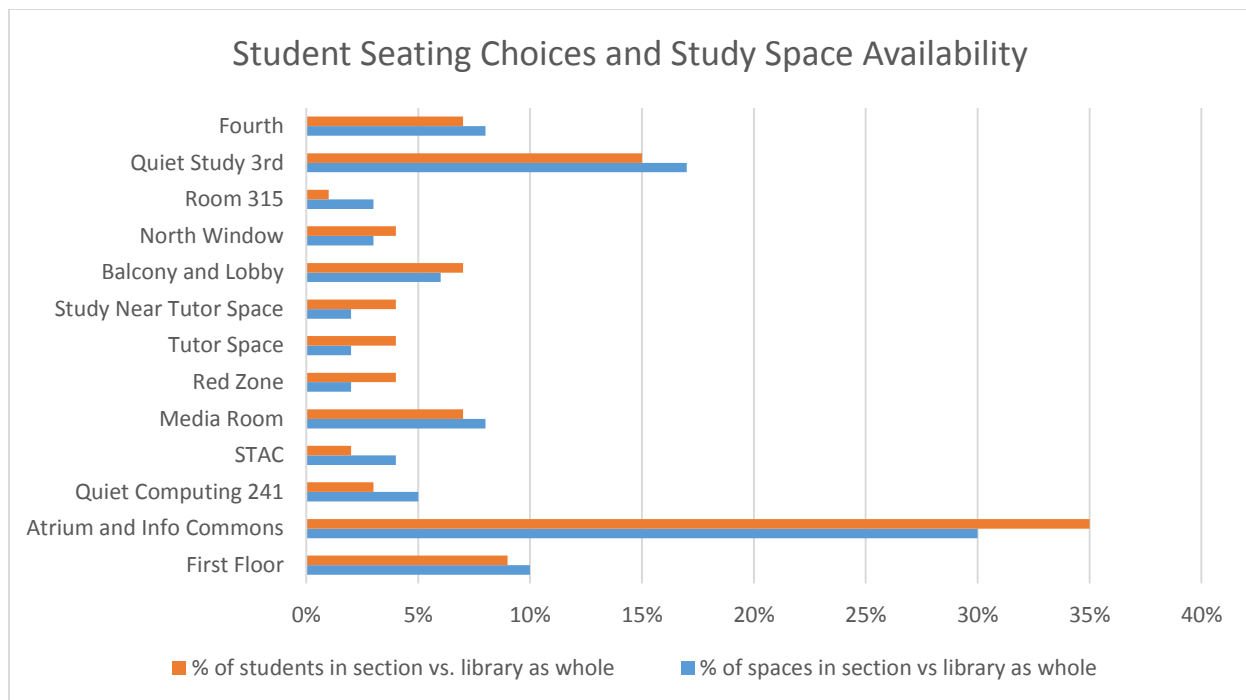


APPENDIX C: CURRENT USE PATTERNS

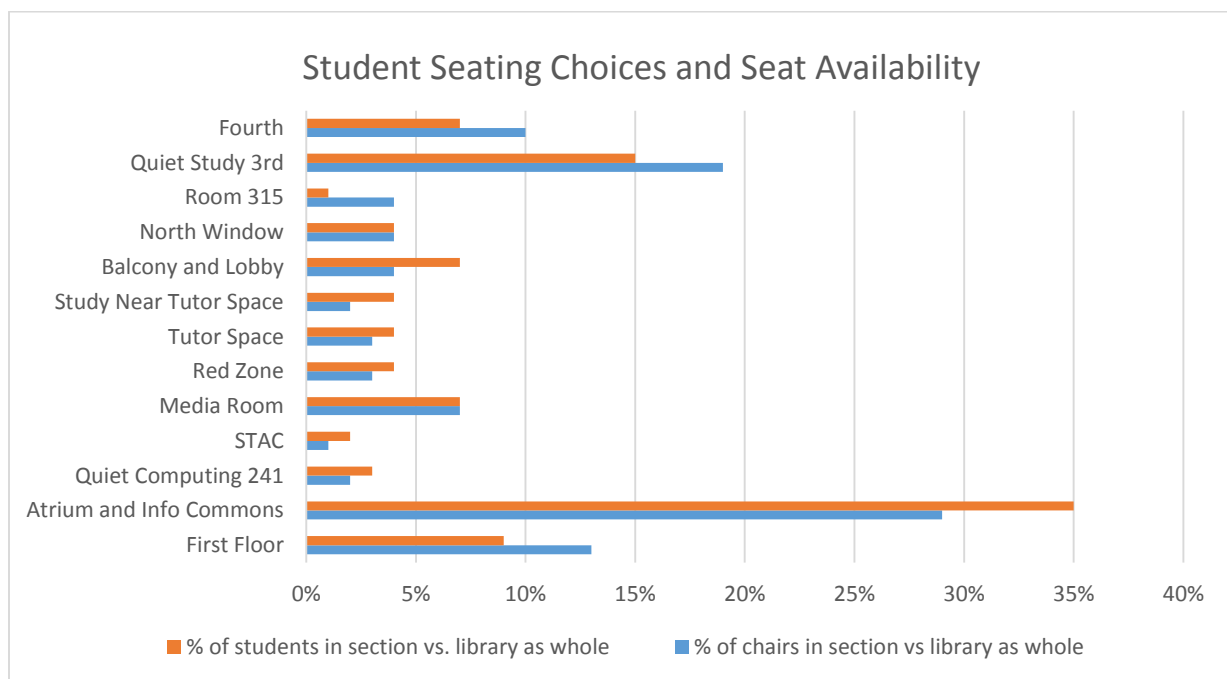
During the Spring 2015 semester, the SUMA counts observed where students were sitting, whether they were alone or in a group, including the size of the group, and what technology they used.



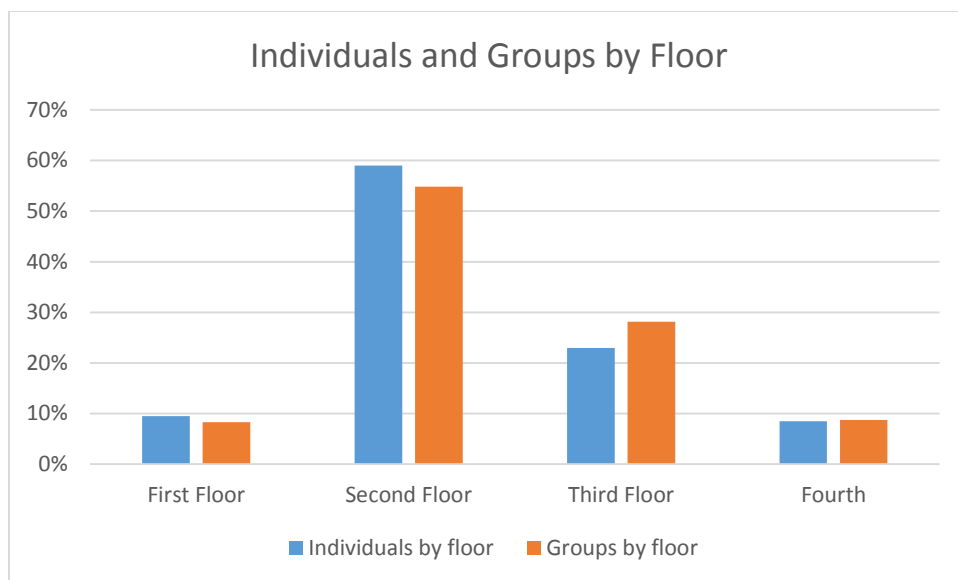
Identifying student preferences about where to sit in the library is a more complicated question than it appears on the surface. There are a variety of factors that influence where students sit, including noise levels, lighting, privacy, outlets, and availability. Even the question of seating availability, though, merits further consideration. For example, a table with four chairs provides seating for four students, which would suggest that if one student was at the table it was only 1/4 occupied; however, in practice, students are unlikely to sit at a table that is already occupied, even if three chairs are available, suggesting that, functionally, a table is fully occupied whether there is one person or four sitting at it. This has been observed in large-scale studies of academic library buildings (e.g., Leighton and Weber, 1999) and locally by members of the Assessment Team doing SUMA counts. However, to address this and for openness in the process, this report presents information on both ways of considering seating: by number of chairs and by “study spaces,” or tables. When a “study space” is referenced, it is reflecting one functional space, whether a single study carrel or a table for four. References to “seats” and “chairs” are indicative of individual seats, whether they are located with alone or with others at a table.



Popular study spaces included the 2nd floor atrium (35%), the quiet study area of the 3rd floor (15%), and the 4th floor (7%). Generally, student seating preferences aligned with study space availability, although the Atrium and Info Commons area was slightly overrepresented in student choices vis-à-vis study space availability. (SUMA) The same general pattern is reflected whether considering seating by the number of chairs or by study space.



These patterns also remained remarkably consistent over the course of the semester, including during peak use time (finals week and the week before finals).

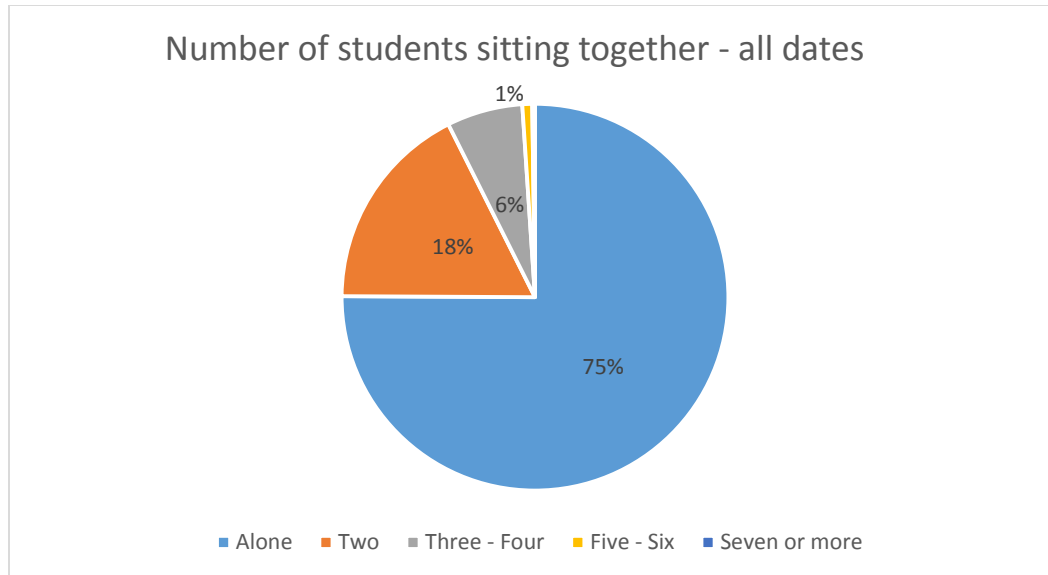


When comparing individual use to group use, some interesting patterns emerge. More individuals than groups are using the 1st floor, officially designated as the “Group Study Room” and the 2nd floor. Proportionally, more groups are using the 4th floor and the 3rd floor than individuals are. (SUMA) This observed behavior was supported by the needs-assessment survey, in which many students identified a preference working in groups on the quieter floors. This also suggests a need to reconsider how “group work” is considered. Group spaces are currently set up in the library to accommodate talking and interaction and the primary focus for groups is on the 1st and 2nd floors. However, students seating choices and responses to the survey demonstrate that group study is often about proximity rather than interaction. Assessment Team members interviewed a group of 17 students quietly working together during finals week in Spring Semester 2015. The students revealed that none of them were in the same classes, nor were they studying the same topics. Rather, they were friends who wanted to provide moral support and spend time together while they studies. This was supported by other students working quietly in groups.

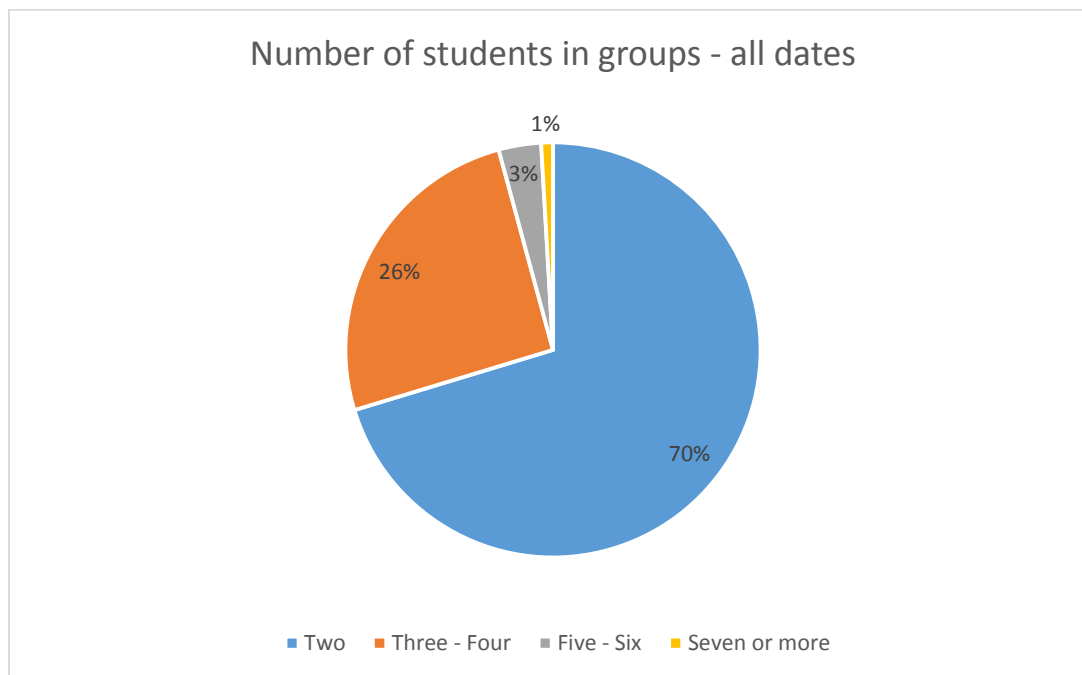
Group Size

Number of observed students by group size – across all SUMA dates			Number of observed students by group size – during peak weeks (April 21, 22, 28, 29)		
		(as % of occupancy)			(as % of occupancy)
Alone	10,213	75%	Alone	3,779	70%
Two	2,383	17%	Two	1,036	19%
Three to Four	863	6%	Three to Four	447	8%
Five to Six	112	1%	Five to Six	64	1%
Seven or More	31	<1%	Seven or More	15	<1%

Across the span of the study, about three times as many people worked alone compared to those who worked with at least one other person. At peak time (finals week and the week before), these ratios went down slightly, indicating proportionally more group work during the last two weeks of the semester.



When students do work in groups, they tend to work in groups of two-four people, with 96% of groups consisting of two-four individuals. During the peak weeks of finals and the week before finals, the group sizes grew slightly with more students studying in groups of three-four and five-six than during other times of the semester. It should be noted that fully half of the groups of seven or more were observed during the last two weeks of the semester.



Studying Alone

Zones	1 st Floor	Atrium and Info Commons	STAC	Media Room	Red Zone	Tutor Space	Study Near Tutor Space	Balcony and Lobby	North Window	Quiet Study 3 rd	4 th
totals (Group Sum)	709	3643	226	781	179	90	107	943	409	2112	920
by percentage	7%	35%	2%	8%	2%	1%	1%	9%	4%	21%	9%

Pairs

Zones	1 st Floor	Atrium and Info Commons	STAC	Media Room	Red Zone	Tutor Space	Study Near Tutor Space	Balcony and Lobby	North Window	Quiet Study 3 rd	4 th
totals (Group Sum)	295	1062	24	119	118	166	131	72	69	195	212
by percentage	12%	43%	1%	5%	5%	7%	5%	3%	3%	8%	9%

More than 65% of the observed people studying in pairs were recorded on the 2nd floor, which reflects a use above what is expected based on seating in the library (52% of study spaces are on the 2nd floor). The use of the 3rd and 4th floors by groups of two is noticeable: 33% of all pairs of students worked were observed on the quiet 3rd and 4th floors. This is indicative of student preference for group spaces in both the quiet and non-quiet areas of the library. (SUMA)

Groups Of 3-4 People

Zones	1 st Floor	Atrium and Info Commons	STAC	Media Room	Red Zone	Tutor Space	Study Near Tutor Space	Balcony and Lobby	North Window	Quiet Study 3 rd	4 th
totals (Group Sum)	125	459	11	58	51	38	72	22	11	33	74
by percentage	13%	48%	1%	6%	5%	4%	8%	2%	1%	3%	8%

Over 70% of the observed groups of three-four people were on the 2nd floor. Very few groups of this size were observed on the 3rd floor, but 8% of groups with three-four people were on the 4th floor, again indicating the need for some quiet group space. (SUMA)

Groups Of 5-6 People

Zones	1 st Floor	Atrium and Info Commons	STAC	Media Room	Red Zone	Tutor Space	Study Near Tutor Space	Balcony and Lobby	North Window	Quiet Study 3 rd	4 th
totals (Group Sum)	27	90	1	16	20	4	11	12	4	12	8
by percentage	13%	44%	1%	8%	10%	2%	5%	6%	2%	5%	4%

Larger groups tended to congregate in the atrium and the open-air cubicles (“red zone”). It is worth noting, however, that more of these large groups were observed in quiet zones on the 3rd and 4th floors than on the 1st floor, which is the designated group study area. (SUMA)

7+ people:

About 75% of the observed groups of seven or more people were on the 2nd floor, but 10% were on the 3rd floor working quietly. Larger groups seem to prefer the red zone about as much as the 1st floor. (SUMA)

The observed counts suggest that students’ choices in study locations does not always align with the intention of the space. More students than expected were observed working in groups on designated quiet spaces.